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HEALTH DEPARTMENT

ANNUAL REPORT

FOR

1925

SINGAPORE

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MUNICIPAL HEALTH OFFICE

SINGAPORE, March, 1926.

To

THE PRESIDENT,
MUNICIPAL COMMISSIONERS,
SINGAPORE.

SIR,

I have the honour to report as follows for the year 1925:—

I. ZYMATIC DISEASE

There were 962 cases notified compared with 750 in 1924 and with 788 in 1923.

The following table shows the comparison between this year and the previous ten years:—

Year	Small-pox	Plague	Enteric Fever	Cholera	Diphtheria	Erysipelas	Chicken-pox	Puerperal Fever	Paratyphoid Fever	Cerebro-Spinal Fever	Tuberculosis	Total
1915 ...	18	34	89	9	15	4	...	...	...	...	...	169
1916 ...	70	23	104	13	30	4	127	2	13	...	...	386
1917 ...	33	45	120	8	37	4	118	20	4	7	...	396
1918 ...	11	176	287	...	31	4	107	8	2	5	104	735
1919 ...	14	11	174	75	42	3	34	14	3	22	866	1258
1920 ...	4	61	129	33	33	1	68	15	2	29	520	895
1921 ...	150	28	127	1	49	11	119	13	4	70	319	891
1922 ...	268	39	68	1	52	7	127	16	2	32	169	781
1923 ...	3	52	63	...	37	14	188	12	1	9	409	788
1924 ...	9	20	64	11	38	9	230	22	...	16	331	750
Average for 10 years	58.0	48.9	122.5	15.1	36.4	6.1	...	...	...	...	...	...
1925 ...	10	59	136	1	51	2	31	14	2	10	365	962



Recd June 1926

(2-D) DISEASES REPORT

YEAR 1911

(2-D)

The following return shows the number of notifiable diseases for each month of the year :—

		January	February	March	April	May	June	July	August	September	October	November	December	Total
Enteric Fever	...	7	6	10	9	12	6	11	13	11	12	23	16	136
Chicken-pox	...	12	47	54	50	45	14	12	22	20	14	10	12	312
Small-pox	...	...	4	2	1	1	...	1	...	...	...	...	1	10
Plague	...	6	7	11	14	9	...	3	...	...	...	7	2	59
Diphtheria	...	3	4	2	2	4	...	1	8	6	9	8	4	51
Puerperal Fever	...	...	...	2	..	3	2	...	1	2	3	1	...	14
Erysipelas	...	...	...	1	...	...	...	...	...	1	...	...	...	2
Tuberculosis	...	10	18	16	11	17	26	41	53	47	52	36	38	365
Paratyphoid Fever	...	...	...	1	...	...	...	1	..	...	...	...	...	2
Cerebro-spinal Fever	...	...	...	2	2	5	...	1	...	...	...	...	...	10
Cholera	...	...	...	..	1	...	...	...	...	...	...	...	...	1
Total	...	38	86	101	90	96	48	71	97	86	91	85	73	962

The following table shows the incidence by nationalities :—

		Europeans	Eurasians	Chinese	Malays	Indians	Others	Total	
Enteric Fever	4	7	106	2	12	5	136
Chicken-pox	7	32	23	6	235	9	312
Small-pox	1	...	6	...	2	1	10
Plague	50	1	8	...	59
Diphtheria	7	2	37	1	4	...	51
Puerperal Fever	1	8	1	4	...	14
Erysipelas	2	...	...	...	2
Tuberculosis	3	4	268	28	49	13	365
Paratyphoid Fever	1	...	1	...	...	...	2
Cerebro-spinal Fever	6	...	4	...	10
Cholera	1	...	...	1
Total	...	23	46	507	39	319	28	962	

(3-D)

SMALL-POX

During the year there were 10 cases, 1 American, 1 Japanese, 2 Indians and 6 Chinese. Of the total 6 either came directly from ships or developed smallpox within a day or two of arrival in the Colony. There were two deaths.

PLAQUE ✓

There were 59 cases during the year 55 being Bubonic in type and 4 Septicaemic. 47 occurred in the first five months of the year, 3 in July, and the remainder in the last two months. Of the 59 only 6 recovered, 34 were found dead, 8 died on the same day as admitted to hospital, 7 on the second day, 3 on the third day and 1 on the fourth day.

Of the 59 cases, the addresses of 47 were in the South division. Of the remaining 12, 1 in Bukit Timah Road worked in Raffles Chambers, 1 in North Bridge Road worked in New Market Road, 1 found at Siglap was definitely traced to Japan Street and 1 in Albert Street worked in the South division. Of the remaining 8, 3 were found dumped in Dorset Road, Beach Road and Shaik Madarsah Lane, 1 was found in Kampong Bugis who gave a history of having returned sick three days before from the Dutch East Indies, 1 was found in Joo Chiat Road and 1 at Bukit Panjang. With regard to the last two no history could be obtained but as there was no evidence of infection existing in these districts it is likely that the disease was contracted elsewhere. Of the remaining two cases, 1 was found in Manila Street and 1 in Campbell Lane. They are the only ones of the series that might definitely be said to have occurred in the North division. That there was one focus of disease in this division is proved by the fact that one plague infected rat was found in 535 North Bridge Road.

✓ During the year 12 plague rats were found, 11 in the South division. Dead rats were found during disinfection in six plague houses but none were found infected, though this might be accounted for by the fact that the rats when picked up, were either in an advanced state of decomposition or even mummified. On the other hand none of the live rats caught in plague houses either during disinfection or during the special measures following the occurrence of a case of human plague, were found infected except in one case where two infected rats were found in a house in Havelock Road where there had been a case of human plague one week previously. In another case during disinfection of a plague house an infected rat was found in the house adjoining, while on another occasion infected rats to the number of five were found in one house which was one of a block of back-to-back houses, in other two of which there had previously been three cases of human plague.

The experience of the year confirms that of other years, namely that our plague cases as a rule are not imported, but are contracted in Singapore. All the evidence goes to prove the presence of rat plague. It never assumes large proportions but it is fairly wide spread over the South division. Of the 11 rats found infected in this division 1 was found at 148 Cross Street on 16/4/25 while in the area bounded by the sea, Chulia Street, South Canal Road, South Bridge Road, Cross Street, Amoy Street and McCallum Street, 28 cases of human plague were

definitely located. On 9/2/25 a plague rat was picked up at one of the Rubbish centres in the South division but it could not be more closely located.

Another focus was in New Market Road district where 10 cases of human plague were definitely located. 1 infected rat was found in the Rubbish centre in New Market Road on 2/3/25 while 2 infected rats were found in 37 Havelock Road (a Plague house) on 13/5/25. 1 infected rat was found in Keng Cheow Street Rubbish centre on 18/7/25, in which street a case of human plague was dumped on 28/7/25.

Later in the year another focus of rat plague appeared in the block bounded by Tanjong Pagar Road, Neil Road, Duxton Road, and Craig Road, when over a period of a fortnight, from 23/11/25 to 7/12/25, 5 infected rats were found in 335 Tanjong Pagar Road. A week previous to their being found, there had been two fatal cases of human plague in Duxton Road and another in a house in Tanjong Pagar Road.

The routine trapping and examination of rats was carried on throughout the year on the same lines as in previous years i.e., as a routine all over the town and intensively in plague houses and those, adjoining them and in districts where there was evidence of rat plague. The detailed reports of these examinations will be found in the Bacteriologist's report which is appended. In all, 4,217 rats were examined and as already stated 12 were found infected.

On 2,769 rats which were brought to the laboratory alive, 8,511 fleas or 3.1 per rat were caught and identified. Of these 8,470 were X. Cheopis. This confirms our experience of previous years that Cheopis is practically the only flea found on rats in Singapore.

The problem of plague in Singapore and our freedom from large epidemics is in a way bewildering. All the evidence collected shows that almost everything is favourable to the rapid spread of both rat and human plague—the presence of the rat epizootic—a heavy rat population infested with only one flea and that a potent transmitter—back to back houses the ground floors of which are stacked from floor to ceiling with all manner of goods giving both food and shelter to innumerable rats and the upper floors of which are densely overcrowded by human population.

Rat Plague is always with us but it does not assume alarming proportions as there is no evidence of wholesale mortality amongst rats, though there must be many more cases of rat plague than the records would show. The smallness of the number of rat cases would naturally account for the few human cases, but it is difficult to account for the small number of rat cases. The only conclusion I can come to is that the *continued* small number of fleas found per rat has something to do with it. When a plague rat dies there are, say three potential plague fleas to be accommodated with fresh hosts. They naturally prefer another rat host and as there are always plenty rats most likely they do find another rat. Occasionally they may have to find a human host and so the few human cases are accounted for. Again, the infected fleas, as they are so few in number, may all find a lodging on one rat; they may not all be infected (though this is unlikely) and some may die

before they find a fresh host. There is already some scientific evidence that plague infection may cause mortality amongst fleas. Or some of them may have lost the power to infect before finding and biting a fresh host, or some may find a resistant host. This is not unlikely, as, since rat plague has been present for some years in Singapore, the local rat may have developed a certain amount of immunity to plague. It follows then with all these possibilities that one case of rat plague does not necessarily lead to many more—it may not, on occasion, mean even one fresh case. The above if correct would to a certain extent account for the slow spread of rat plague and in consequence of human plague which is after all only an overflow of rat plague. If fleas were much more numerous the chances of more rapid spread would be much greater. It is known that a high temperature is inimical to the rat flea and this in Singapore accounts for their small numbers. It is also noted that the flea index on the rats rises during the cooler months. Therefore what we have to fear in Singapore is a long continued spell of cool weather.

CHOLERA ✓

Only one case occurred during the year. It was found after death dumped in Selegie Road and was certified by the Coroner. No information could be obtained.

ENTERIC FEVER

136 cases were notified as against 64 in 1924. But as 80 deaths from this cause were reported it is obvious there must have been many more cases of the disease. Allowing a 20 per cent. mortality rate would mean there must have been 400 cases which must be much nearer the truth. At the same time the cases were well spaced over the year and at no time were there any signs of even a localised epidemic. This would go to prove that the cases had no common source of infection such as a contaminated water or milk supply etc. They were all undoubtedly chance infections contracted from existing cases or "carriers" most probably through the medium of contaminated cooked food supplies. And this is not surprising when one considers how cooked food is still allowed to be hawked by all and sundry without let or hindrance.

TUBERCULOSIS

365 cases were notified but as 1,310 deaths were reported as due to this cause it is obvious that the returns are valueless as an indication of the prevalence of this disease.

DIPHTHERIA

51 cases were reported. Judging from the condition of the cases when reported as a general rule, I am satisfied that many more cases go unrecognised especially amongst the poorer classes who do not consult a medical man.

The disease is much more prevalent in Singapore than is generally imagined.

CHICKEN-POX

312 cases were reported as against 230 in 1924. Many were removed to hospital owing to the impossibility of obtaining reasonable isolation in the homes.

GENERAL

(1) Medical Inspection of Passengers. There were 444 permits to land issued to 966 passengers of whom 64 failed to report.

(2) Disinfection of infected articles. 4,821 articles of an estimated value of \$7,056.35 were passed through the steam disinfecter. The disinfecter was used on 51 occasions and charged 54 times during the year and on all occasions worked well.

(3) Houses quarantined and released. 57 houses were quarantined temporarily and all were released before the end of the year. 894 houses (Phthisis cases 598) were disinfected.

(4) Infected persons and contacts. 301 patients were removed to hospital and 7 contacts were sent to St. John's, 25 bodies were removed for autopsy and 77 bodies were buried under supervision.

II. MIDDLETON HOSPITAL

At the end of 1924 there were 13 patients remaining in hospital while during the year there were 473 admissions—of these 444 were discharged, 32 died and 10 remained at the end of the year.

Dr. A. Thurai's report is appended.

III. VACCINATION

The following vaccinations were reported :—

—	Successful	Modified	Failed	Not seen	Total
Medicalmen ...	825	11	...	...	836
Municipal Vaccinators ...	5,552	82	5	62	5,701
Private Vaccinators ...	2,267	1	7	6	2,281
Total ...	8,644	94	12	68	8,818

Of the total number of 5,701 vaccinations performed by the Municipal Vaccinators 5,552 or 97.3 per cent. were successful, 5 were unsuccessful, 82 were modified and 62 remained to be seen a second time.

The nationalities of those vaccinated by Municipal Vaccinators were :— Europeans 14, Eurasians 100, Chinese 4,656, Malays 594, Indians 287, others 50. Of these 2,938 were males and 2,763 females of the following ages :—

Under 1 year of age ...	...	...	4,837
Between 1 and 2 years ...	...	...	283
" 2 " 5 "	...	...	239
" 5 " 10 "	...	...	103
" 10 " 20 "	...	...	41
Unknown ...	...	...	198
			<u>5701</u>

At the Municipal Vaccination Stations there were performed 3,046 vaccinations, at Police Stations 2,326, at Houses 167 and Contacts 162.

One thousand five hundred and twenty tubes of lymph were used by the Municipal Vaccinators being equivalent to an average of 3.7 persons per tube.

IV. VITAL STATISTICS

The following statistics are calculated on an estimated mean annual population of 396,341 made up as follows:—

			Males	Females	Total
Europeans	...	...	3,375	1,875	5,250
Eurasians	...	...	2,273	2,429	4,702
Chinese	...	...	207,321	106,688	314,009
Malays	...	...	20,694	16,298	36,992
Indians	...	...	24,834	4,421	29,255
Others	...	...	3,967	2,166	6,133
	Total	...	262,464	133,877	396,341

These figures of course are very arbitrary and as I said in my report for 1924 should be accepted with reserve. I am glad to report however that the suggestion of last year that a quinquennial census should be taken has been accepted and arrangements are in hand to have one taken in the middle of this year.

The following return gives the population, the number and rates per 1,000 of births, infantile deaths and deaths at all ages for the last 10 years:—

Year	Population	BIRTHS		INFANTILE DEATHS		DEATHS AT ALL AGES	
		No.	Rate	No.	Rate	No.	Rate
1915	289,375	7,343	25.37	1,920	261.4	7,928	27.39
1916	296,951	7,688	25.88	2,001	260.2	8,689	29.26
1917	304,815	8,156	26.75	2,447	300.0	11,900	35.75
1918	312,995	8,065	25.76	2,131	264.2	13,172	41.08
1919	321,480	8,535	26.54	2,234	251.7	10,756	33.45
1920	330,303	8,969	27.15	2,233	248.9	11,731	35.51
1921	351,461	10,237	29.12	2,383	232.7	11,947	33.99
1922	362,597	10,368	28.59	2,488	239.9	11,553	31.86
1923	373,513	10,757	28.79	2,431	225.9	10,049	26.90
1924	384,758	11,757	30.55	2,614	222.3	10,420	27.08
Average 10 years	332,824	9,187	27.45	2,288	251.7	10,814	32.22
1925	396,341	12,363	31.19	2,600	210.3	11,184	28.21

I. BIRTHS

The total number of births registered during the year was 12,363 compared with 11,757 in 1924 and 10,757 in 1923.

There were 6,474 male and 5,889 female births.

The birth rate was 31.19 per mille as compared with 30.55 in 1924 and 28.79 in 1923.

The birth rate is the highest recorded.

The following return gives the number of births and the birth rate for each month of the year:—

Month	Births	Birth Rate	Month	Births	Birth Rate
January ...	962	29.12	July ...	1,023	30.97
February ...	864	26.15	August ...	1,052	31.85
March ...	926	28.03	September ...	1,118	33.85
April ...	919	27.82	October ...	1,291	39.08
May ...	997	30.18	November ...	1,092	33.06
June ...	994	30.09	December ...	1,125	34.06

The following return shows the number of births and the birth rate for each nationality:—

—	Males	Females	Total	Birth Rate
Europeans ...	64	62	126	24.00
Eurasians ...	85	77	162	34.45
Chinese ...	5,157	4,664	9,821	31.27
Malays ...	695	655	1,350	36.49
Indians ...	387	339	726	24.81
Others ...	86	92	178	29.02
Total ...	6,474	5,889	12,363	31.19

There were 385 still births compared with 382 in 1924.

2. DEATHS

The total number of deaths for the year was 11,184 and the death rate 28.21 per 1,000 compared with 27.08 in 1924 and 26.90 in 1923.

Four hundred and seventy three persons died who had been less than 3 months resident in Singapore. Deducting these the death rate is reduced to 27.02 per 1,000.

The excess of births over deaths was 1,179.

The death rate is only .13 above that for last year. In the face of the progressive overcrowding that is taking place in the congested areas we may congratulate ourselves on the fact that the increase was not substantially greater.

The total number of deaths from Tuberculosis was 1,310 as against 1,276 for 1924, and from the Pneumonias 1,481 as against 1,262. As in my 1924 report I repeat that many of the Pneumonia deaths may really be Phthisis deaths, but, be that as it may, the deaths from these two causes, both of which are primarily spread by the close herding of human beings in overcrowded, insanitary, sunless and badly ventilated dwellings, reach the enormous total of 2,791 or 25 per cent. of the deaths from all causes. Comment is needless. The remedy is in our own hands, and is not a matter for speculation. We know that in other parts of the world the cleaning up of the slums has resulted in an immediate fall in the number of deaths from these causes.

The following return gives the number of deaths and the death rate for each month of the year:—

Month	Deaths	Death Rate	Month	Deaths	Death Rate
January ...	761	23.04	July ...	889	26.91
February ...	721	21.82	August ...	1,014	30.70
March ...	801	24.25	September ...	999	30.24
April ...	900	27.24	October ...	1,107	33.51
May ...	1,057	32.00	November ...	978	29.61
June ...	935	28.30	December ...	1,022	30.94

MORTALITY BY NATIONALITIES

The following return gives the number of deaths from each cause among males and females of the different nationalities. The classification followed is that of the International List (1912.)

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
I. General Diseases:—								
1. Enteric Fever ...	M	2	I	54	3	7	—	67
	F	—	2	10	—	1	—	13
4. Malaria ...	M	5	—	681	60	58	1	805
	F	—	—	118	26	11	2	157
5. Small Pox ...	M	—	—	I	—	—	—	I
	F	1	—	—	—	—	—	I
6. Measles ...	M	—	—	I	—	—	—	2
	F	—	—	—	—	—	—	1
9-A. Diphtheria ...	M	—	—	6	—	I	—	7
	F	—	—	7	—	I	—	8
10. Influenza ...	M	—	3	42	23	12	1	81
	F	—	—	27	19	5	4	55
12. Cholera ...	M	—	—	—	—	I	—	1
	F	—	—	—	—	—	—	0
14. Dysentery ...	M	I	—	467	9	29	5	511
	F	—	I	81	3	8	I	94
15. Plague ...	M	—	—	37	—	7	—	44
	F	—	—	9	—	—	—	9
17. Leprosy ...	M	—	I	13	—	I	—	15
	F	—	I	9	I	I	—	12
19-A. Malaria ...	M	—	—	—	—	—	—	0
	F	—	—	I	—	—	—	I
20-A. Pyaemia ...	M	—	—	—	—	—	—	2
	F	—	—	—	—	—	—	0
20-B. Septicaemia ...	M	—	—	15	—	—	I	16
	F	—	—	10	—	—	—	10
24. Tetanus ...	M	—	—	28	3	2	—	33
	F	—	—	23	—	—	—	23
26. Pellagra ...	M	—	—	I	—	—	—	I
	F	—	—	—	—	—	—	0
27. Beri beri ...	M	—	—	588	27	7	2	624
	F	—	—	101	10	5	—	116
28-A. Pulmonary tuberculosis ...	M	3	3	374	43	54	6	483
	F	—	4	58	6	13	11	92
28-B. Phthisis ...	M	—	3	439	35	20	—	497
	F	—	I	141	31	17	2	192
29-B. Miliary tuberculosis ...	M	I	—	4	—	I	—	5
	F	—	—	I	—	—	—	I
30. Tuberculous meningitis ...	M	I	—	13	—	2	—	16
	F	—	I	6	—	—	—	7
31-B. Other peritoneal and intestinal tubercle ...	M	—	—	—	—	I	—	I
	F	—	—	3	—	—	—	3
32. Tuberculosis of spinal column ...	M	—	—	6	—	—	—	6
	F	—	—	3	—	—	—	3
33. Tuberculosis of joints ...	M	—	—	3	—	—	—	3
	F	—	—	I	—	—	—	0
34-B. Scrofula ...	M	—	—	—	—	—	—	I
	F	—	—	—	—	—	—	0
34-C. Other tuberculosis included under 34 ...	M	—	—	I	—	I	—	2
	F	—	—	—	—	—	—	0
35. Disseminated tuberculosis ...	M	—	—	3	—	—	—	3
	F	—	—	6	—	—	—	6

DISEASES	Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
62. Locomotor Ataxy ... { M — — — — 3 — — — } 30 } 30 } 3	M	—	—	3	—	—	—	30 } 30 } 3
F — — — — — — — — }	F	—	—	—	—	—	—	
63-B. Other diseases included under 63 ... { M — — — — 8 — I — — } 92 } 92 } 11	M	—	—	8	I	—	—	92 } 92 } 11
F — — — — — — — — }	F	—	—	I	—	—	I	
64-A. Apoplexy ... { M — — — — 17 — I — — } 14 } 14 } 35	M	—	—	17	I	3	—	21 } 14 } 35
F — — — — — — — — }	F	I	—	10	—	3	—	
64-B. Oedema of Brain ... { M — — — — — — — — } 10 } 10 } 1	M	—	—	—	—	I	—	10 } 10 } 1
F — — — — — — — — }	F	—	—	—	—	—	—	
64-E. Cerebral haemorrhage ... { M — — — — 33 — 2 — — } 13 } 13 } 56	M	I	I	33	—	8	—	43 } 13 } 56
F — — — — — — — — }	F	I	2	7	2	I	—	
65. Softening of brain ... { M — — — — 2 — I — — } 2 } 2 } 6	M	—	—	2	I	I	—	4 } 2 } 6
F — — — — — — — — }	F	—	—	—	I	I	—	
66-A. Hemiplegia ... { M — — — — 15 — 2 — — } 12 } 12 } 29	M	—	—	15	I	—	—	17 } 12 } 29
F — — — — — — — — }	F	—	—	9	2	I	—	
66-B. Paraplegia ... { M — — — — 11 — I — — } 12 } 12 } 18	M	—	—	11	I	—	—	12 } 12 } 18
F — — — — — — — — }	F	—	—	6	—	—	—	
66-C. Other forms of paralysis ... { M — — — — 2 — I — — } 2 } 2 } 5	M	—	—	2	I	—	—	3 } 2 } 5
F — — — — — — — — }	F	—	—	I	I	—	—	
67. General paralysis of the insane ... { M — — — — 21 — I — — } 22 } 22 } 22	M	—	—	21	I	—	—	22 } 22 } 22
F — — — — — — — — }	F	—	—	—	—	—	—	
69. Epilepsy ... { M — — — — — — — — } 0 } 0 } 2	M	—	—	—	—	I	—	0 } 0 } 2
F — — — — — — — — }	F	—	—	I	—	—	—	
71-B. Other infantile convulsions ... { M — — — — 361 — 77 — 26 — 2 } 466 } 466 } 877	M	—	—	361	77	26	2	466 } 466 } 877
F — — — — — — — — }	F	—	I	301	91	16	2	
73-B. Neuritis ... { M — — — — 27 — 2 — 3 — } 32 } 32 } 59	M	—	—	27	2	3	—	32 } 32 } 59
F — — — — — — — — }	F	—	—	13	11	2	I	27 } 27 } 59
74-C. Cerebral tumour ... { M — — — — 1 — I — — — } 1 } 1 } 2	M	—	—	1	—	—	—	1 } 1 } 2
F — — — — — — — — }	F	—	I	—	—	—	—	
74-D. Other diseases of the nervous system ... { M — — — — — — — — } 1 } 1 } 1	M	—	—	—	—	I	—	1 } 1 } 1
F — — — — — — — — }	F	—	—	—	—	—	—	
75. Diseases of the eyes and annexa ... { M — — — — I — — — — } 1 } 1 } 2	M	—	—	I	—	—	—	1 } 1 } 2
F — — — — — — — — }	F	—	—	I	—	—	—	
76-A. Mastoid disease ... { M — — — — I — — — — } 1 } 1 } 2	M	—	—	I	—	—	—	1 } 1 } 2
F — — — — — — — — }	F	—	—	I	—	—	—	
76-B. Other diseases of the ears ... { M — — — — 4 — I — — — } 4 } 4 } 5	M	—	—	4	—	—	—	4 } 4 } 5
F — — — — — — — — }	F	—	—	I	—	—	—	
III. Diseases of the Circulatory System:—								1,177
77. Pericarditis ... { M — — — — 13 — 4 — — — } 17 } 17 } 17	M	—	—	13	—	4	—	17 } 17 } 17
F — — — — — — — — }	F	—	—	—	—	—	—	
78-A. Acute myocarditis ... { M — — — — 2 — 2 — — — } 5 } 5 } 9	M	—	2	2	—	I	—	5 } 5 } 9
F — — — — — — — — }	F	—	I	2	—	I	—	
78-B. Infective endocarditis ... { M — — — — 3 — — — — } 3 } 3 } 3	M	—	—	3	—	—	—	3 } 3 } 3
F — — — — — — — — }	F	—	—	—	—	—	—	
78-C. Other acute endocarditis ... { M — — — — 7 — I — — — } 8 } 8 } 20	M	—	—	7	I	—	—	8 } 8 } 20
F — — — — — — — — }	F	—	I	7	—	3	—	
79-A. Valvular disease ... { M — — — — 56 — 2 — 2 — } 62 } 62 } 83	M	I	I	56	2	2	I	62 } 62 } 83
F — — — — — — — — }	F	—	—	20	—	—	I	
79-B. Fatty degeneration of heart ... { M — — — — I — — — — } 1 } 1 } 2	M	—	—	I	—	I	—	1 } 1 } 2
F — — — — — — — — }	F	—	—	I	—	—	—	
79-C. Other organic diseases of the heart ... { M — — — — 9 — I — — — } 12 } 12 } 19	M	—	I	9	—	2	—	12 } 12 } 19
F — — — — — — — — }	F	—	—	5	I	I	—	
80. Angina Pectoris ... { M — — — — 2 — I — — — } 4 } 4 } 5	M	—	2	I	—	I	—	4 } 4 } 5
F — — — — — — — — }	F	—	I	—	—	—	—	

DISEASES		Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
81-A. Aneurism ...	...	M F	— —	— —	7 15 3	I I I	2 3 —	— I —	12 0 —
81-B. Arterial Sclerosis ...	...	M F	I I	I	— 2	— I	— —	— —	21 6 —
82-A. Cerebral embolism and thrombosis ...	...	M F	— —	— —	— 2	— —	— —	— —	1 2 —
82-B. Other embolism and thrombosis ...	...	M F	— —	— —	2 I	I —	— I	— —	3 2 —
84-B. Other diseases of the lymphatic system ...	...	M F	— —	— —	— I	— —	— I	— —	2 0 —
85-C. Haemorrhage; other diseases of the circulatory system...	...	M F	— —	— I	— —	— —	— —	— —	0 1 —
IV. Diseases of the Respiratory System :—									206
87-B. Laryngitis ...	...	M F	— —	— —	— I	— —	— —	— —	— —
87-C. Other diseases of larynx ...	...	M F	— —	— —	— I	— —	— —	— —	— —
89 & 90-A. Bronchiectasis ...	...	M P	— —	— —	2 —	— —	— —	— —	2 0 —
89 & 90-B. Other bronchitis ...	...	M F	— —	— I	105 68	6 13	6 5	— —	118 87 —
91. Broncho-pneumonia ...	...	M F	— —	— 4	210 141	18 19	27 20	I 4	259 188 —
92-A. Lobar pneumonia ...	...	M F	— —	— I	120 31	19 12	16 6	2 2	207 52 —
92-B. Pneumonia (type not stated)	...	M F	— —	— I	413 271	21 24	38 6	— I	472 303 —
93-A. Empyema ...	...	M F	— —	— —	3 I	— I	2 —	— —	5 2 —
93-B. Other pleurisy ...	...	M F	— —	— —	5 —	— —	— —	— —	6 0 —
94-C. Hypostatic pneumonia ...	...	M F	— —	— —	— 1	— —	— —	— —	— 0 —
95. Gangrene of the lung ...	...	M F	— —	— —	5 —	— —	— —	— —	5 0 —
96. Asthma ...	...	M F	— —	— —	19 8	I 2	4 2	— —	24 12 —
97. Pulmonary emphysema ...	...	M F	— —	— —	— I	— —	— —	I —	— 0 —
98-A. Fibroid disease of lung ...	...	M F	— —	— —	— I	— —	— —	— —	— 0 —
98-B. Other diseases of the respiratory system ...	...	M F	— —	— —	2 —	— —	— I	— —	3 0 —
V. Diseases of the Digestive System :—									1,751
99-A. Diseases of the teeth and gums ...	...	M F	I —	— I	I —	— —	— —	— —	2 1 —
100-A. Tonsillitis ...	...	M F	— —	— —	I 2	— —	— —	— —	— 2 —
100-C. Other diseases of the pharynx ...	...	M F	— —	— —	4 —	— —	2 —	— —	6 0 —
102. Perforating ulcer of stomach	...	M F	— —	— —	24 2	— I	I I	— —	25 4 —

DISEASES		Sex	Europeans	Eurasians	Chinese	Malays	Indians	Others	TOTAL
VIII. Diseases of the Skin and of the Cellular Tissue:—									
I42-A. Senile gangrene ...	{ M F	—	—	—	I	—	—	—	I I } 2
I42-B. Noma, gangrene of mouth ...	{ M F	—	—	—	2	I	—	—	2 I } 3
I42-C. Noma pudendi ...	{ M F	—	—	—	I	—	—	—	0 I } 1
I42-D. Other gangrene ...	{ M F	—	—	—	8	—	—	—	8 4 } 12
I43. Carbuncle, boil... ...	{ M F	—	—	—	6	—	—	—	6 5 } 11
I44-A. Phlegmon	{ M F	—	—	—	10	—	2	I	I 2 } 13
I44-B. Acute abscess ...	{ M F	—	—	I	6	I	2	—	10 I } 11
I45-A. Ulcer, bedsores ...	{ M F	—	—	—	4	—	—	—	4 3 } 7
I45-C. Pemphigus	{ M F	—	—	—	4	J	—	—	5 0 } 5
I45-D. Other diseases of integumentary system ...	{ M F	—	—	—	—	—	I	—	I 0 } 1
									66
IX. Diseases of the Bones and of the Organs of Locomotion :—									
I46. Diseases of the bones ...	{ M F	—	—	—	7	—	—	I	8 1 } 9
I47. Diseases of the joints ...	{ M F	—	—	—	2	—	I	—	2 1 } 3
X. Malformations :—									
I50-A. Congenital hydrocephalus ...	{ M F	—	—	—	I	—	—	—	I 0 } 1
I50-C. Congenital malformation of heart ...	{ M F	I	—	—	4	—	—	I	6 3 } 9
I50-D. Other congenital malformation ...	{ M F	I	—	—	2	—	—	—	5 2 } 7
									17
XI. Diseases of Early Infancy :—									
I51-A. Premature birth ...	{ M F	—	I	I	129	28	4	—	162 144 } 306
I51-B. Infantile atrophy, debility and marasmus ...	{ M F	—	I	I	56	20	8	—	85 60 } 145
I51-C. Icterus neonatorum ...	{ M F	—	—	—	43	12	3	I	7 5 } 12
I52-B. Atelectasis ...	{ M F	2	—	—	7	—	—	—	12 8 } 20
					5	—	—	—	—
XII. Old Age :—									
I54-B. Senile decay ...	{ M F	—	—	3	131	31	5	2	172 168 } 340
XIII. Affections Produced by External Causes :—									
I55. Suicide by poisons ...	{ M F	—	—	—	I	—	—	—	I I } 2

DISEASES		Sex	Europeaus	Eurasians	Chinese	Malays	Indians	Others	TOTAL
157. Suicide by hanging	... {	M	—	—	25	—	3	1	29
		F	—	—	1	—	—	—	1
159. Suicide by firearms	... {	M	2	—	—	—	—	—	3
		F	—	—	—	—	—	—	0
160. Suicide by cutting or pier-	cing instruments	M	—	—	1	—	—	—	1
	... {	F	—	—	—	—	—	—	0
165. Other acute poisonings	... {	M	—	—	4	—	—	—	4
		F	—	—	3	—	—	—	3
167. Burns	... {	M	—	—	10	—	1	1	11
		F	—	—	5	1	1	1	8
168. Absorptions of deleterious	gases	M	2	—	—	—	—	—	2
	... {	F	—	—	—	—	—	—	0
169. Accidental drowning	... {	M	—	—	28	3	2	—	33
		F	—	—	4	—	—	—	4
170. Injury by firearm	... {	M	—	—	1	—	—	—	1
		F	—	—	1	—	—	—	1
171. Injury by cutting or pier-	cing instruments	M	—	—	2	—	—	—	2
	... {	F	—	—	—	—	—	—	0
172. Injury by fall	... {	M	—	—	1	—	—	—	1
		F	—	—	—	—	—	—	0
175. Injury by other crushing	... {	M	—	—	15	1	4	—	21
		F	—	—	2	—	—	—	3
176. Injury by animal	... {	M	—	—	—	—	—	—	0
		F	—	1	—	—	—	—	1
179. Effects of heat	... {	M	—	—	—	—	—	—	0
		F	—	—	—	—	—	—	1
180. Lightning	... {	M	—	—	—	—	—	—	0
		F	—	—	2	—	—	—	2
182. Homicide by firearms	... {	M	—	—	10	—	—	—	10
		F	—	—	—	—	—	—	0
183. Homicide by cutting or	... {	M	—	—	22	5	3	—	30
piercing instruments		F	—	—	2	—	—	—	2
184. Homicide by other means	... {	M	—	—	—	—	1	—	1
		F	—	—	—	—	—	—	0
185. Fractures	... {	M	—	—	40	4	3	—	47
		F	—	—	4	—	—	—	4
186. Other violence	... {	M	I	—	29	3	12	1	46
		F	—	I	8	—	1	—	10
XIV. Ill-Defined Causes :—									284
187. Dropsy	... {	M	—	—	60	5	3	—	68
		F	—	—	31	3	2	1	37
189-A. Heart failure...	... {	M	—	—	1	—	2	—	3
		F	—	—	1	—	2	—	3
189-B. Atrophy debility, maras-	mus	M	—	—	23	10	4	—	37
	... {	F	—	—	33	13	5	1	52
189-D. Pyrexia	... {	M	—	—	215	24	3	—	242
		F	—	—	117	19	8	—	144
189-E. Other ill-defined deaths...	... {	M	—	—	116	3	9	—	128
		F	—	—	19	—	2	—	21
189-F. Cause not specified	... {	M	—	—	16	—	1	1	18
		F	—	—	4	—	1	1	5
Total males	... {	M	40	44	6,365	570	591	51	7,661
Total females	... {	F	13	50	2,731	459	218	52	3,523
Grand Total	... {	T	53	94	9,096	1,029	809	103	11,184

The death rates for the different nationalities were :—

	1925			1924		
	Males	Females	Total	Males	Females	Total
Europeans	11.85	6.93	10.09	7.38	8.12	7.64
Eurasians	19.35	20.58	19.99	21.21	19.84	20.50
Chinese	30.70	25.59	28.96	28.11	25.28	27.17
Malays	27.54	28.16	27.81	34.33	31.92	33.27
Indians	23.79	49.31	27.65	21.16	44.62	24.74
Others	12.85	24.00	16.79	16.95	20.97	18.41
Total ...	29.18	26.31	28.21	27.44	26.35	27.08

The following return gives the death rates per 1,000 of each nationality from each group of diseases :—

		Europeans	Eurasians	Chinese	Malays	Indians	Others
General Diseases	4.7	7.4	11.8	8.7	10.2	7.0	
Diseases of Nervous System	0.7	1.2	2.8	5.2	2.6	1.3	
Do. Circulatory System ...	0.5	2.1	0.5	0.2	0.8	0.3	
Do. Respiratory System ...	0.1	3.1	4.4	3.6	6.1	1.7	
Do. Digestive System ...	1.3	1.9	3.0	1.9	2.1	1.9	
Do. Genito Urinary System ...	0.3	1.0	1.2	0.7	1.2	1.1	
Do. Early Infancy ...	0.5	0.8	1.1	2.2	0.9	0.3	
Ill defined causes ... ...	...	...	2.0	2.0	1.4	0.6	

MORTALITY IN RELATION TO AGE AND SEX

The following return shows the number of deaths from each cause in the different age periods for each sex :—

DISEASES		Sex	Age										Unknown	TOTAL
			Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years		
62. Locomotor ataxy	...	M	—	—	—	—	—	—	—	—	—	—	—	3
		F	—	—	—	—	—	—	—	—	—	—	0	3
63-B. Other diseases included under 63	...	M	—	—	—	—	—	—	—	—	—	—	—	9
		F	—	—	—	—	—	—	—	—	—	—	—	2
64-A. Apoplexy	...	M	—	—	—	—	—	—	—	—	—	—	—	21
		F	—	—	—	—	—	—	—	—	—	—	—	14
64-B. Oedema of brain	...	M	—	—	—	—	—	—	—	—	—	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	0
64-E. Cerebral haemorrhage	...	M	I	—	—	—	—	—	—	—	—	—	—	43
		F	I	—	—	—	—	—	—	—	—	—	—	13
65. Softening of brain	...	M	—	—	—	—	—	—	—	—	—	—	—	4
		F	—	—	—	—	—	—	—	—	—	—	—	2
66-A. Hemiplegia	...	M	—	—	—	—	—	—	—	—	3	4	4	17
		F	—	—	—	—	—	—	—	—	3	—	5	12
66-B. Paraplegia	...	M	—	—	—	—	—	—	—	4	2	4	2	12
		F	—	—	—	—	—	—	—	I	2	3	—	18
66-C. Other forms of paralysis	...	M	—	—	—	—	—	—	—	—	—	—	—	3
		F	—	—	—	—	—	—	—	—	—	—	—	2
67. General paralysis of the insane	...	M	—	—	—	—	—	—	—	4	10	6	2	22
		F	—	—	—	—	—	—	—	—	—	—	—	0
69. Epilepsy	...	M	—	—	—	—	—	—	—	—	—	—	—	0
		F	—	—	—	—	—	I	I	—	—	—	—	2
71-B. Other infantile convulsions		M	193	189	79	5	—	—	—	—	—	—	—	465
		F	167	160	82	2	—	—	—	—	—	—	—	411
73-B. Neuritis	...	M	—	—	—	—	—	—	—	—	—	—	—	32
		F	—	—	—	—	—	—	—	—	—	—	—	27
74-C. Cerebral tumour	...	M	—	—	—	I	—	—	—	—	—	—	—	1
		F	—	—	—	I	—	—	—	—	—	—	—	1
74-D. Other diseases of the nervous system	...	M	—	—	—	—	—	—	—	I	—	—	—	1
		F	—	—	—	—	—	—	—	—	—	—	—	0
75. Diseases of the eyes and annexa	...	M	—	I	—	—	—	—	—	—	—	—	—	1
		F	—	I	—	—	—	—	—	—	I	—	—	1
76-A. Mastoid disease	...	M	—	—	—	—	—	I	I	—	—	—	—	1
		F	—	—	—	—	—	I	—	—	—	—	—	1
76-B. Other diseases of the ears	...	M	—	—	I	—	—	—	—	—	2	—	I	4
		F	—	I	—	—	—	—	—	—	—	—	—	1
III. Diseases of the Circulatory System:		M											I,177	
77. Pericarditis	...		M	—	—	—	—	—	I	6	6	2	2	
		F	—	—	—	—	—	—	—	—	—	—	—	17
78-A. Acute myocarditis	...	M	—	—	—	—	—	—	—	—	3	2	2	5
		F	—	—	—	—	—	—	—	—	—	—	—	4
78-B. Infective endocarditis	...	M	—	—	—	—	—	—	—	2	—	I	—	3
		F	—	—	—	—	—	—	—	—	—	—	—	0
78-C. Other acute endocarditis	...	M	—	—	—	—	—	—	I	4	3	I	—	8
		F	—	—	—	—	—	—	I	5	2	I	—	12
79-A. Valvular disease	...	M	—	—	—	—	I	I	2	14	14	24	8	62
		F	—	—	—	—	I	I	2	7	4	3	3	21
79-B. Fatty degeneration of heart	...	M	—	—	—	—	I	I	2	—	—	—	I	—
		F	—	—	—	—	I	I	2	—	—	—	I	2
79-C. Other organic diseases of the heart	...	M	—	I	—	—	I	I	2	3	—	2	5	12
		F	—	I	—	—	I	I	2	3	I	—	—	7
80. Angina pectoris...	...	M	—	—	—	—	—	—	I	—	—	2	I	4
		F	—	—	—	—	—	—	I	—	—	I	—	5

DISEASES

Sex

Under 3 months

3 to 12 months

1 to 5 years

5 to 10 years

10 to 15 years

15 to 20 years

20 to 25 years

25 to 35 years

35 to 45 years

45 to 55 years

Over 55 years

Unknown

TOTAL

81-A. Aneurism ...	M	—	—	—	—	—	—	6	2	2	—	—	—	10	10
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
81-B. Arterial sclerosis ...	M	—	—	—	—	—	—	—	—	—	—	—	—	21	21
	F	—	—	—	—	—	—	—	—	—	—	—	—	6	6
82-A. Cerebral embolism and thrombosis ...	M	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	F	—	—	—	—	—	—	—	—	—	—	—	—	2	2
82-B. Other embolism and thrombosis ...	M	—	—	—	—	—	—	—	—	—	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	2	—	—	—	2	5
84-B. Other diseases of the lymphatic system ...	M	—	—	—	I	I	—	—	—	—	—	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
85-C. Haemorrhage; other diseases of the circulatory system ...	M	—	—	—	—	—	—	—	—	—	—	—	—	0	1
	F	—	—	—	—	I	—	—	—	—	—	—	—	—	—

IV. Diseases of the Respiratory System :—

87-B. Laryngitis ...	M	—	—	—	—	—	—	I	—	—	—	—	—	I	I
87-C. Other diseases of larynx ...	M	—	—	—	—	—	—	—	—	I	—	—	—	I	I
89 & 90-A. Bronchiectasis ...	M	—	—	—	—	—	—	—	—	I	—	—	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
89 & 90-B. Other bronchitis ...	M	21	46	21	2	—	—	—	2	—	4	7	15	118	205
	F	11	23	26	2	—	—	—	—	—	4	5	11	87	87
91. Broncho-pneumonia ...	M	21	79	58	15	3	4	8	24	21	19	7	—	259	447
	F	15	60	60	9	7	1	4	3	5	10	14	—	188	188
92-A. Lobar pneumonia ...	M	1	13	7	2	2	3	18	69	36	42	14	—	207	259
	F	5	10	8	2	1	2	1	12	5	1	5	—	52	52
92-B. Pneumonia (type not stated) ...	M	11	47	80	19	12	18	35	58	80	70	42	—	472	775
	F	14	73	72	32	16	9	8	26	21	19	13	—	303	303
93-A. Empyema ...	M	—	—	—	I	I	—	—	2	—	—	—	—	5	7
	F	—	—	—	—	—	—	—	—	—	—	—	—	2	6
93-B. Other pleurisy ...	M	—	—	—	—	—	—	—	3	2	I	—	—	6	6
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
94-C. Hypostatic pneumonia ...	M	—	—	—	—	—	—	—	—	—	—	I	—	I	I
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
95. Gangrene of the lung ...	M	—	—	—	—	—	—	—	—	2	2	I	—	5	5
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
96. Asthma ...	M	—	—	I	—	—	—	—	—	4	5	10	5	24	36
	F	—	—	—	—	—	—	—	—	1	2	3	5	12	12
97. Pulmonary emphysema ...	M	—	—	—	—	—	—	—	—	—	—	—	I	I	I
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
98-A. Fibroid disease of lung ...	M	—	—	—	—	—	—	—	—	—	—	2	—	2	2
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
98-B. Other diseases of the respiratory system ...	M	—	—	—	—	—	—	—	2	1	—	—	—	3	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0

V. Diseases of the Digestive System :—

99-A. Diseases of the teeth and gums ...	M	—	—	—	—	I	—	—	I	—	—	—	—	2	3
	F	—	—	I	—	—	—	—	—	—	—	—	—	1	1
100-A. Tonsillitis ...	M	—	—	—	2	—	—	—	—	I	—	—	—	1	3
	F	—	—	—	—	—	—	—	—	—	—	—	—	2	2
100-C. Other diseases of the pharynx ...	M	—	—	—	—	—	—	—	2	I	—	3	—	6	6
	F	—	—	—	—	—	—	—	—	—	—	—	—	0	0
102. Perforating ulcer of stomach	M	—	—	—	—	I	I	6	10	I	—	8	I	25	29
	F	—	—	—	—	—	—	—	—	—	—	—	—	4	4

1,751

DISEASES		Sex	Age at death										TOTAL	
			Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	
I20-B. Nephritis	M	—	—	—	—	1	5	16	13	22	15	—	72
		F	—	—	—	—	5	3	6	5	6	9	—	34
I21. Chyluria	M	—	—	—	—	—	—	—	—	—	—	—	I
		F	—	—	I	—	—	—	—	—	—	—	—	0
I22-C. Suppression of urine	M	—	—	I	—	—	—	—	—	—	—	—	I
		F	—	—	—	—	—	—	—	—	—	—	—	I
I22-D. Other diseases of the kidney and annexa	M	—	—	—	—	—	—	—	I	4	4	1	10
		F	—	—	—	—	—	—	—	I	—	—	—	I
I23. Calculi of the urinary passages	M	—	—	—	—	—	—	3	3	I	—	—	7
		F	—	—	—	—	—	—	—	—	—	—	—	0
I24. Diseases of the bladder	M	—	—	I	—	—	—	—	1	2	2	I	7
		F	—	—	—	—	—	—	—	—	—	2	—	2
I25-B. Other diseases of urethra, etc.	M	—	—	—	—	—	—	—	—	2	I	—	3
		F	—	—	—	—	—	—	—	—	1	—	—	I
I26. Diseases of the prostate	M	—	—	—	—	—	—	—	—	—	—	2	2
		F	—	—	—	—	—	—	—	—	—	—	0	0
I27. Non-venereal diseases of male genital organs	M	—	—	—	—	—	—	—	I	—	—	—	I
		F	—	—	—	—	—	—	—	—	—	—	—	0
I29. Uterine tumour (non cancerous)	F	—	—	—	—	—	—	—	I	I	—	—	2
I30-B. Other diseases of the uterus	F	—	—	—	—	—	—	—	I	I	—	—	2
I31. Ovarian cyst, tumour	F	—	—	—	—	—	—	I	I	—	I	—	3
I33. Non-puerperal diseases of the breast (non cancerous)	F	—	—	—	—	—	—	I	—	—	—	I	I
VII. The Puerperal State :—														458
I34-A. Abortion	F	—	—	—	—	—	—	I	—	—	—	—	I
I34-B. Haemorrhage of pregnancy	F	—	—	—	—	—	I	—	I	—	—	—	2
I34-C. Uncontrollable vomiting.	...	F	—	—	—	—	—	—	—	I	2	—	—	3
I34-D. Ectopic gestation	F	—	—	—	—	—	—	—	2	I	—	—	3
I35. Puerperal haemorrhage	F	—	—	—	—	—	4	4	5	2	I	—	16
I36. Other accidents of child-birth	F	—	—	—	—	—	I	—	3	4	—	—	8
I37. Puerperal fever	F	—	—	—	—	—	4	6	3	I	—	—	14
I38-B. Puerperal albuminuria and Bright's disease	F	—	—	—	—	—	—	I	—	—	—	I	I
I38-C. Puerperal convulsions	F	—	—	—	—	—	3	3	I	2	—	—	9
I39-B. Puerperal embolism and sudden death	F	—	—	—	—	—	I	—	1	—	—	—	2

DISEASES		Sex	Age										TOTAL
			Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	
VIII. Diseases of the Skin and of the Cellular Tissue:—													
I42-A. Senile gangrene ...	M	—	—	—	—	—	—	—	—	—	—	I	—
I42-B. Noma, gangrene of mouth	F	—	—	—	—	—	—	—	—	—	—	I	—
I42-C. Noma pudendi ...	M	—	—	—	—	—	—	—	—	—	—	2	—
I42-D. Other gangrene ...	F	—	—	—	—	—	—	—	—	—	—	1	—
I43. Carbuncle, boil...	M	—	—	—	—	—	—	—	—	—	—	0	—
I44-A. Phlegmon ...	F	—	—	—	—	—	—	—	—	—	—	2	—
I44-B. Acute abscess ...	M	—	—	—	—	—	—	—	—	—	—	10	—
I45-A. Ulcer, bedsore ...	F	—	—	—	—	—	—	—	—	—	—	1	—
I45-C. Pemphigus ...	M	—	—	—	—	—	—	—	—	—	—	0	—
I45-D. Other diseases of integumentary system ...	F	—	—	—	—	—	—	—	—	—	—	1	—
IX. Diseases of the Bones and of the Organs of Locomotion :—													
I46. Diseases of the bones ...	M	—	—	—	—	—	—	I	I	I	—	8	—
I47. Diseases of the joints ...	F	—	—	—	—	—	—	—	—	—	I	1	9
X. Malformations :—													
I50-A. Congenital hydrocephalus	M	—	—	—	—	—	—	—	—	—	—	—	1
I50-C. Congenital malformation of heart ...	F	—	—	—	—	—	—	—	—	—	—	0	—
I50-C. Congenital malformation of heart ...	M	5	—	—	—	—	—	—	—	—	—	6	—
I50-C. Congenital malformation of heart ...	F	3	—	—	—	—	—	—	—	—	—	3	9
I50-D. Other congenital malformation ...	M	5	—	—	—	—	—	—	—	—	—	5	—
I50-D. Other congenital malformation ...	F	2	—	—	—	—	—	—	—	—	—	2	7
XI. Diseases of Early Infancy :—													
I51-A. Premature birth ...	M	160	—	—	—	—	—	—	—	—	—	2	162
I51-A. Premature birth ...	F	142	I	—	—	—	—	—	—	—	—	1	144
I51-B. Infantile atrophy, debility and marasmus ...	M	66	19	—	—	—	—	—	—	—	—	—	85
I51-B. Infantile atrophy, debility and marasmus ...	F	40	19	I	—	—	—	—	—	—	—	—	60
I51-C. Icterus neonatorum ...	M	7	—	—	—	—	—	—	—	—	—	—	7
I51-C. Icterus neonatorum ...	F	3	2	—	—	—	—	—	—	—	—	—	5
I52-B. Atelectasis ...	M	12	—	—	—	—	—	—	—	—	—	—	12
I52-B. Atelectasis ...	F	8	—	—	—	—	—	—	—	—	—	—	8
XII. Old Age :—													
I54-B. Senile decay ...	M	—	—	—	—	—	—	—	—	—	—	—	483
I54-B. Senile decay ...	F	—	—	—	—	—	—	—	—	—	—	—	340
XIII. Affections Produced by External Causes :—													
I55. Suicide by poisons ...	M	—	—	—	—	—	—	—	I	—	—	—	—
I55. Suicide by poisons ...	F	—	—	—	—	—	—	I	—	—	—	—	—

DISEASES		Sex	Age Groups										TOTAL		
			Under 3 months	3 to 13 months	1 to 5 years	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years		
157. Suicide by hanging	...	M	—	—	—	—	—	—	—	—	—	—	—	29	
		F	—	—	—	—	—	—	—	—	—	—	—	1	
159. Suicide by firearms	...	M	—	—	—	—	—	—	—	—	—	—	—	3	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
160. Suicide by cutting or piercing instruments	...	M	—	—	—	—	—	—	—	—	—	—	—	I	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
165. Other acute poisonings	...	M	—	—	—	—	—	—	—	—	—	—	—	4	
		F	—	—	—	—	—	—	—	—	—	—	—	3	
167. Burns	...	M	—	—	—	—	—	—	—	—	—	—	—	11	
		F	—	—	I	I	2	2	—	—	—	—	—	8	
168. Absorptions of deleterious gases	...	M	—	—	—	—	—	—	—	—	—	—	—	2	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
169. Accidental drowning	...	M	—	—	2	2	2	4	6	6	5	5	I	33	
		F	—	—	2	I	—	—	—	—	—	—	—	4	
170. Injury by firearm	...	M	—	—	—	—	—	—	—	—	—	—	I	1	
		F	—	—	—	—	—	—	—	—	—	—	—	2	
171. Injury by cutting or piercing instruments	...	M	—	—	—	—	—	—	—	—	2	—	—	2	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
172. Injury by fall	...	M	—	—	—	—	—	—	—	—	—	I	—	I	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
175. Injury by other crushing	...	M	—	—	2	—	2	3	4	4	4	I	I	21	
		F	—	—	I	I	—	—	—	—	—	—	—	3	
176. Injury by animal	...	M	—	—	—	—	—	—	—	—	I	—	—	I	
		F	—	—	—	—	—	—	—	—	—	—	—	I	
179. Effects of heat	...	M	—	—	—	—	—	—	—	—	—	—	—	0	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
180. Lightning	...	M	—	—	I	—	—	—	—	—	I	—	—	2	
		F	—	—	—	—	—	—	—	—	—	—	—	10	
182. Homicide by firearms	...	M	—	—	—	—	—	—	—	2	5	—	2	10	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
183. Homicide by cutting or piercing instruments	...	M	—	—	—	—	—	—	I	3	12	5	3	30	
		F	—	—	—	—	—	—	—	—	I	—	—	2	
184. Homicide by other means	...	M	—	—	—	—	—	—	—	—	—	—	I	—	
		F	—	—	—	—	—	—	—	—	—	—	—	0	
185. Fractures	...	M	—	—	—	I	2	2	4	19	7	7	4	47	
		F	—	—	—	I	3	2	—	2	2	—	I	44	
186. Other violence	...	M	—	—	I	3	2	7	3	14	8	7	I	46	
		F	—	—	I	—	—	—	—	I	5	3	—	10	
XIV. Ill-Defined Causes :—		M	—	—	—	—	—	I	—	4	10	18	35	68	
187. Dropsy	...	F	—	—	I	I	—	I	—	5	5	3	20	37	
189-A. Heart failure...	...	M	—	—	—	—	—	I	—	—	I	—	—	3	
		F	—	—	—	—	—	—	—	2	I	—	—	3	
189-B. Atrophy, debility, marasmus	...	M	—	—	23	5	—	—	—	2	I	5	I	37	
		F	—	—	30	6	—	—	3	2	I	5	5	52	
189-D. Pyrexia	...	M	20	70	76	14	5	4	8	11	13	15	6	242	
		F	12	41	59	7	4	3	4	6	2	4	2	144	
189-E. Other ill-defined deaths...	...	M	6	4	6	1	—	—	2	12	35	34	15	128	
		F	9	3	2	—	—	—	2	I	—	—	3	21	
189-F. Cause not specified	...	M	4	1	2	—	—	I	I	I	—	—	7	18	
		F	3	—	—	—	—	—	I	—	—	—	I	5	
Total males	...	M	730	702	498	122	74	184	456	1392	1389	1218	864	32	7,661
Total females	...	F	606	562	500	124	77	92	131	360	336	288	442	5	3,523
Grand Total	...	T	1336	1264	998	246	151	276	587	1752	1725	1506	1306	37	11,184

Infantile Death Rate.

The infantile death rate was 210.3 per 1,000 births compared with 222.3 in 1924 and 225.9 in 1923.

The rate for each nationality and sex was as follows:—

—			Males	Females	Total
Europeans	...	...	62.5	16.1	39.6
Eurasians	...	...	141.1	116.8	129.6
Chinese	...	...	222.4	203.2	212.9
Malays	...	...	271.9	235.1	254.0
Indians	...	...	188.6	144.5	168.0
Others	...	...	81.3	119.5	101.1
Total ...			221.1	198.3	210.3

As compared with previous year these rates show increases for Europeans, Eurasians and Indians, and decreases for Chinese, Malays and other nationalities.

The drop in the Malay Infantile death rate is particularly striking being 44 per 1,000 less than that of 1924.

Mortality according to nationalities and ages.

The following return shows the number of deaths at different age periods in the different nationalities:—

Nationalities	Sex	Under 3 months	3 to 12 months	1 to 5 years	5 to 10 years	10 to 20 years	20 to 25 years	25 to 35 years	35 to 45 years	45 to 55 years	Over 55 years	Unknown	Total
Europeans	M	4	...	1	...	1	4	8	10	8	3	1	40
	F	1	...	...	...	...	1	4	...	3	4	...	13 } 53
Eurasians	M	6	6	4	1	...	1	4	4	7	11	...	44 }
	F	3	6	3	2	2	3	5	5	5	16	...	50 } 94
Chinese	M	588	559	426	107	204	367	1114	1200	1069	703	28	6365 }
	F	500	444	410	105	131	93	253	266	208	316	5	2731 } 9096
Malays	M	96	93	46	9	25	23	79	68	53	78	...	570 }
	F	77	77	52	6	21	18	56	42	35	75	...	459 } 1029
Indians	M	32	41	18	5	25	61	181	98	70	57	3	591 }
	F	22	27	32	10	15	14	34	15	28	21	...	218 } 809
Others	M	4	3	3	...	3	...	6	9	11	12	...	51 }
	F	3	8	3	1	...	2	8	8	9	10	...	52 } 11,184
Total males	M	730	702	498	122	258	456	1392	1389	1218	864	32	7661 }
Total females	F	606	562	500	124	169	131	360	336	288	442	5	3523 } 11,184
Grand Total		1,336	1,264	998	246	427	587	1,752	1,725	1,506	1,306	37	11,184

The six chief causes of death for the last 4 years were :—

		1922	1923	1924	1925
Penumonias	...	1,275	1,244	1,262	1,481
Phthisis	...	1,544	1,434	1,276	1,254
Malaria	...	1,047	869	848	962
Convulsions	...	573	644	839	877
Beri Beri	...	968	636	678	740
Dysentery	...	695	514	576	605

Once again it is a pleasure to record that the Infantile Mortality rate is the lowest recorded being 210.3 per 1000 or 12 less than that of last year; and this too in the face of a rising total death rate and no amelioration of the terrible conditions of housing etc., in the congested areas where most of the infants are born. I do not think that further proof is required of the success of the work being carried out by our Infant Welfare Branch.

From the figures kindly supplied by the Protectorate it appears that during the year 3,140 infants came to Singapore from China. Of these 857 left for other places leaving a balance of 2,283 who presumably remained in the city. If these are added to the total births then the infantile mortality rate falls to 177.52. The corresponding figure for last year was 184.78.

Certification of Deaths.

The following return shows the percentage of deaths the causes of which were certified by medicalmen, the coroner, and the Inspecting Registrars respectively :—

—	Europeans	Eurasians	Chinese	Malays	Indians	Others	Total
Registrars	...	7	2,923	645	213	9	3,797
Medicalmen	45	82	5,500	344	518	83	6,572
Coroner	8	5	673	40	78	11	815
Total	53	94	9,096	1,029	809	103	11,184

This gives a percentage of 33.9 certified by Registrars, as against 35.0 last year, 58.7 by medicalmen as against 58.5 last year and 7.2 certified by the coroner as against 6.3 last year.

The percentages for the last 10 years have been as follows :—

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Registrars	48.6	45.3	3.88	39.9	36.8	36.1	35.1	37.3	35.0	33.9
Medicalmen	46.2	49.4	55.8	55.2	58.1	58.3	58.2	55.4	58.5	58.7
Coroner	5.2	5.2	5.3	4.8	5.0	5.4	6.5	7.1	6.3	7.2

V. Registration of Births and Deaths.

The numbers registered at the different offices were as follows:—

	Births.	Deaths.
Central Office ...	... 1,214	2,785
Prinsep Street Office ...	... 6,560	4,783
Kreta Ayer Office ...	... 4,589	3,616
	<hr/>	<hr/>
	12,363	11,184
	<hr/>	<hr/>

Eleven births and 2 deaths were registered in the Post Registration Books and the sum of \$217 was received in late registration fees.

Three queries were sent to Medical Practitioners for further information where the causes of death had been indefinitely stated.

VI. Analyst.

During the year 9,478 samples were submitted for analysis. Details will be found in the Analyst's report which is appended.

(1) Municipal Water. 7,026 samples taken from all points of the service, were analysed.

In addition 170 samples of water from Municipal undertakings in Johore were examined.

(2) Well Waters. 3 samples were examined and were found to be heavily contaminated.

(3) Milks from Itinerant Vendors. 319 samples were analysed and of these 78 or 24.6 per cent. were adulterated by the addition of water while 8 or 2.3 per cent. were deficient in fat.

(4) Tinned Milk. 49 samples were analysed.

(5) Municipal Sewage Works. 1,231 samples collected at various points, were analysed.

(6) Private Sewage Installations. 176 samples were analysed.

VII. Bacteriologist.

The Bacteriological report is appended.

(1) Public Health Examination. 7,883 specimens were received for examination.

(2) Rats. The bodies of 4,217 rats were examined and 12 were found to be plague infected.

(3) Municipal Water. 5787 samples of water taken from various points in the supply were examined.

(4) Mortuary. 32 autopsies were performed the cause of death in 23 of them being plague.

VIII. Anti Mosquito Work.

Dr. Dawson's report is appended.

Anti-malarial Work. New anti-malarial work involving the laying of 6,544 yards of subsoil pipes and 1,004 yards of open concrete channels was

carried out. The most notable piece of work done was that at the Singapore Golf Club where over 5,000 yards of pipes were put down. In this particular area it was necessary to depart from our approved methods of draining ravines by open channels in preference to underground pipes. It was essential to prevent all possible contamination of the streams so that they had to be put underground. Though one of the ravines is over half a mile in length the work has given every satisfaction.

Repairs and extensions were carried out in existing areas. Three ravines formerly drained by subsoil pipes were thrown open and treated by deep central channel of the usual type. These channels totalled 793 yards. The results were much more satisfactory and lasting than when the ravines were drained by subsoil pipes and open sumps.

At the end of the year there had been put down in the Anti-malarial areas approximately 40 miles of subsoil pipes and approximately 12½ miles of open channels. The areas were regularly patrolled and maintained by four gangs of 20 coolies each. They also carried out the new work and extensions already mentioned.

Anti-mosquito Work. Further large swamps were dried out by open drains during the year. Rather a big programme included work in the ravines round the General Hospital, Tan Tock Seng Hospital, Katong, and Mount Pleasant. Throughout the year over 100 coolies were permanently engaged in this work.

Anti Stegomyia Work.

This was carried out by the Sanitary Inspectors. In 156,132 inspections larvae were found on 31,966 occasions or in 20.47 per cent. of the houses visited.

IX. Nurses and Clinics

The European nurses paid 15,788 visits including 9,203 first visits 5,192 revisits and 1,393 wrong addresses.

First Visits. Infants seen numbered 8,684 or 70.2 per cent. of the total births as compared with 70.6 per cent. in 1924. Of these 121 were ailing and in 45 cases the cord was unhealthy.

There were 59 cases of twin births.

Infants not seen numbered 519, of whom 232 had been put out to nurse 160 were still born and 127 had died before a visit could be paid.

6,665 infants were being breast fed 1,767 were receiving tinned milk 191 were partly on breast milk and partly on tinned milk, while 20 were receiving other suitable foods.

Of the 2,020 bottles in use 501 were of unsuitable pattern, while 98 were dirty.

The condition of the mothers when first visited was satisfactory in 9,062 cases, unsatisfactory in 77. while 5 had been removed and 18 had died,

Of the mothers 20 had been attended by medicalmen, 75 by A. class midwives, 5,684 by B. class, 1,761 by C. class, 1,221 by friends while the remaining 390 were unattended.

Of the 9,151 mothers seen, 8,085 were living in cubicles or single rooms and 1,066 in houses of more than one room.

Revisits. 5,188 mothers and 5,177 infants were seen on revisits. Of the former 4,906 remained in a satisfactory condition, 58 less so, 216 had removed and 8 had died. Of the infants 4,566 were satisfactory, 274 were ailing, 247 had been removed and 90 had died.

The chief infantile ailments were Thrush, Conjunctivitis and Marasmus.

Clinics.

During the year at the two Clinics 5,172 consultations were held by the European sisters in charge of the Clinics, on babies brought to the depots for vaccination. A further 3,570 babies of whom 2,807 were new cases, were brought to the Clinics for advice and treatment and on these a further 11,157 consultations were held.

First visits were also paid to 5,401 children in their homes. There were taken on the books of the Clinics subsequent visits to those infants numbered 7,329. Most of this work was done by the Asiatic Health Visitors.

Summarised the work of the two Clinics amounted to 34,584 consultations on 10,704 infants.

During the year two more Asiatic Health Visitors were engaged and provision has been made for the appointment of four more in 1926.

The Clinics are extremely popular and the work is multiplying by leaps and bounds so that it threatens to get out of hand. The appointment of a whole time lady medical officer with home experience of Infant Welfare work should no longer be delayed.

The buildings, too, are now totally inadequate and unsuitable and money should be found this year to provide for more commodious and more suitable premises.

Any money spent on Infant Welfare work will show a handsome and a quick return.

X. Midwives.

At the end of the year there were 321 midwives on the Register. During the year the registered midwives attended 8,114 cases.

The following return shows the number and nationality of cases attended by B. and C. class midwives.

Europeans	...	...	...	4
Eurasians	...	...	...	116
Chinese	...	...	...	6,543
Malays	...	...	...	1,145
Indians	...	...	...	271
Others	...	...	...	35
			Total	8,114

A Class midwives attended ...	61 cases
B and C Class midwives attended	8,114 ,,
In Hospital there were ...	<u>1,655</u> ,,
Total ...	<u>9,830</u> cases

The number of births registered during the year was 12,363 so that 79.5 per cent. of the mothers received some kind of skilled attention at the birth of their children.

In 798 cases the whole of the midwife's fee and in 1,223 part of it, was paid by the Commissioners—the total amount paid being \$7,260.10.

XI. Food and Markets.

The Market Inspector's report is appended.

XII. Food Shops, etc.

Licences were issued for

403	Coffee Shops
215	Eating Houses
84	Meat Shops
23	Bakeries
11	Aerated Water Factory
217	Milk Vendors
27	Lodging Houses

XIII. Places of Public Resort

Theatres, Hotels, Public Houses, Liquor Shops, Cinematograph Halls and Opium Shops were periodically inspected.

XIV. Slaughter Houses.

217,148 animals were received for slaughter compared with 207,896 in 1924.

The figures are as follows:—

		<u>1924</u>	<u>1925</u>
Pigs	...	... 152,441	160,784
Sheep	....	... 28,054	28,402
Goats	...	... 6,829	6,220
Bullocks	...	... 20,030	21,199
Buffaloes	...	... 543	543
Total	...	<u>207,896</u>	<u>217,148</u>

61 animals were rejected as being in bad condition. The carcases of 1,026 dead or diseased animals were destroyed and 4,101 portions, injured or diseased, removed and destroyed.

There were 7091 Australian sheep received for slaughter.

XV. Offensive Trades.

2,191 licenses for offensive trades were issued the fees amounting to \$8,365.

There were 63 prosecutions for carrying on offensive trades without licence and 50 convictions were obtained with fines amounting to \$230.

XVI. Hawkers.

Hawkers were licensed and fees drawn as follows :—

		Number	Fees
Day Hawkers	...	2,117	\$ 5,779.90
Night Hawkers	...	3,094	16,440.20
Itinerant Hawkers	...	1,316	1,316.00
		<hr/>	<hr/>
		6,527	\$23,536.10
		<hr/>	<hr/>

The Hawker Shelters continue to be well patronised—but they are of little help to the real poor hawker. He is invariably shouldered out or bought out by the fixed stall hawker who in most cases is running quite a big business. A glance at any of the shelters will convince anyone that these shelters are really small markets, and the persons holding licences in them are really shopkeepers. The only remedy is to enclose the shelters and make the licensees pay market rates for their stalls while reserving a portion of the shelter for the real two basket hawker who should be admitted at nominal rates. This combined with a more vigorous campaign against unlicensed hawkers in the streets (which cannot be carried out unless more drastic powers are given) should produce some semblance of order out of the present chaos.

XVII. Burial Grounds.

The number of burials in Municipal Burial Grounds was as follows :—

		1924	Since opening
Bidadari—			
Protestant Division	...	121	2,057
French Roman Catholic Division	...	192	2,403
Portuguese Roman Catholic Division		56	895
Pauper Division	...	547	7,690
Serangoon Road—			
Mohammedan	...	434	3,169
Bukit Brown—			
Chinese	...	1,005	1,822
Infectious Disease—			
Serangoon Road	...	71	462
Yeo Chu Kang Road	...	2	533
Hindoo Cemetery—			
Burials	...	25	25
Cremations	...	6	6
		<hr/>	<hr/>
	Total	2,459	19,082

There were 4,686 inspections made during the year by the Burial Ground Inspector.

29 exhumations were attended.

There were 192 cremations.

The following return shows the number of Burial grounds in use Public and Private belonging to various nationalities, within Municipal Limits.

		<u>Public</u>	<u>Private</u>	<u>Total</u>
Christian	...	...	2	—
Jewish ...	...	...	1	—
Parsee ...	...	...	1	—
Parsee Islam	...	...	1	—
Malay ...	...	...	5	5
Hokien ...	...	...	8	80
Teochew	...	...	1	9
Hindoo...	...	...	1	—
Kling Islam	...	..	1	2
Prison and General Hospital...		1	—	1
		<u>22</u>	<u>96</u>	<u>118</u>

The total number of Burials inside Municipal Limits for the year was 6,874 made up as follows:—

Europeans	...	...	...	63
Eurasians	...	...	...	III
Chinese	...	...	...	4,876
Malays	...	...	...	1,289
Indians	...	...	...	474
Others	...	...	...	61
		Total	...	<u>6,874</u>

XVIII. Staff.

Dr. Gordon, Assistant Health Officer went on leave during the year and resigned the service while on leave. Dr. Duffus, Assistant Health Officer also resigned the service at the termination of his Agreement.

Dr. Gilmour, Bacteriologist, Mr. Holley, Abattoir Superintendent, Mr. Wilson, Divisional Inspector and Miss Robertson, District Nurse went on long leave during the year.

Mrs. Toft, Matron Middleton Hospital retired and Miss Mc.Murray was appointed to the vacancy.

Mrs. Tobin was appointed District Nurse.

Mr. Mac. Mahon, Market Inspector returned from long leave.

Health of Municipal Staff.

There were 6,045 cases of sickness treated, 724 persons were sent to hospital, 6,355 days sick leave were granted and 10,326 dressings were applied. 262 visits were paid to patients in their homes.

The medical care of the progressively increasing staff and labour force of the Commissioners makes greater and greater inroads on the time of the Assistant Health Officers so that there is a danger of their more important duties suffering. I think the time has come to consider the appointment of a special medical officer to take charge of this work.

XIX. General.

There were 14,733 notices, including 3,660 intimations, served during the year which with 2,081 from the previous year made a total of 16,814. Of these 15,252 were complied with during the year.

There were 98 convictions for non-compliance with notices and fines imposed amounting to \$313.

There were 46 arrest cases, all milk sellers.

There were 156,143 inspections made, 952 prosecutions, 717 convictions and fines imposed amounting to \$3,478.00.

XX. Appendices.

The following reports and returns are appended :—

- A. Report of Analyst.
- B. Report of Bacteriologist.
- C. Anti Mosquito Report.
- D. Report of Superintendent Middleton Hospital.
- E. Report of Food and Market Inspector.
- F. Return of Inspections, Prosecutions, etc.
- G. Return of Notices.
- H. Summary of Arrest Cases.
- I. Return of Licenses for Offensive Trades.

I have the honour to be,

Sir,

Your obedient servant,

P. S. HUNTER,

M.A., M.B., Ch.B., D.P.H.,

Municipal Health Officer.

SINGAPORE MUNICIPALITY.

EIGHTEENTH ANNUAL REPORT

OF THE

**MUNICIPAL ANALYTICAL
LABORATORY**

FOR THE YEAR

1925

BY

A. G. HARRINGTON, F.I.C., F.C.S.

MUNICIPAL HEALTH OFFICE,

SINGAPORE, 30th January, 1926.

TO

THE MUNICIPAL HEALTH OFFICER.

SIR,

I have the honour to submit herewith the Eighteenth Annual Report of the Municipal Laboratory.

During the year 1925, a total of 9,478 samples were analysed and the following table summarises the nature of these samples.

Municipal Waters	...	...	...	7,026
Johore Waters	...	...	...	170
Well Waters	...	...	...	3
Miscellaneous Waters	...	...	...	48
Sewages, Effluents etc. from Municipal Sewage Works	...	...	1,231	
Sewages and Effluents from Private Installations	...	...	176	
Milks from Itinerant Vendors	...	...	...	319
Tinned Milks	...	...	...	49
Milk Foods	...	...	...	8
Emulsified Milks	...	...	...	14
Cream and Ice Cream	...	...	...	10
Butter	...	...	...	6
Flour and Bread	...	...	...	16
Tea	...	...	...	18
Tinned Meats	...	...	...	12
Tinned Fish	...	...	...	11
Aerated Waters	...	...	...	117
Sugar	...	...	...	8
Quinine Sulphate	...	...	...	23
Aspirin	...	...	...	4
Olive Oil	...	...	...	4
Brandy	...	...	...	5
Beer	...	...	...	6
Samples from C. R. E. J.	...	...	...	10
Do. Municipal Engineer	...	...	...	6
Do. Electrical Engineer	...	...	...	15
Do. Gas Engineer	...	...	...	10
Do. Water Engineer	...	...	...	10
Action of water on Concrete Pipes	...	...	...	132
Samples from Health Department	...	...	...	14

Municipal Waters

During the year 7,026 samples of water from the Municipal supply were analysed. The samples came from the impounding Reservoirs, the streams feeding these Reservoirs, Filter Beds at Bukit Timah and Woodleigh, clear water tanks, high level service reservoirs, and various stand pipes and taps in the town.

The water passed into the Town's supply, showed no signs of unoxidised sewage on any occasion and the supplies were analysed daily so it may be said that the water for consumption throughout the year was above suspicion.

However some streams leading into Thomson Road Reservoir were intermittently contaminated and in others the contamination would appear to be more regular. But as the outlets of these streams are situated some considerable distance from the outlet valves of the reservoir these contaminations become oxidised and thus rendered innocuous before they reach the supply pipes leading direct to the filter beds. Daily analyses were made of water taken from the Valve Tower at Thomson Road Reservoir and on every occasion the water was above suspicion.

As the area of the watershed is comparatively small it should not be a difficult matter to keep these contaminations down to a minimum.

Analyses of samples taken from the various streams and the Valve Tower at the Kalang River Reservoir showed that this supply was not contaminated.

The filter beds at Bukit Timah Road worked fairly well throughout the year but during the drier months when the water in the reservoir was low the periods of efficiency were considerably lowered.

The filter beds at Woodleigh were only in use for the first half of the year. Filtering then ceased for the remainder of the year whilst alterations were being made.

The filter beds at both Bukit Timah Road and Woodleigh are all of the "slow sand" type. The work they have to do is to remove the suspended and colloidal vegetable and mineral matter. The vegetable matter consists mainly of low forms of vegetable life and if this is not removed then the water on standing tends to develop disagreeable odours and deposits, especially during the hotter months. The mineral matter consists mainly of clay and this gives the water a cloudy appearance. The removal of these impurities is very satisfactorily carried out by the slow sand filter beds and the filtrate delivered during their periods of efficiency is quite

good. However in the course of time, depending to a great extent on the amount of impurities in the water, the efficiency decreases and the filter bed has to be stopped scraped and cleaned. The decrease of efficiency of the filter bed is generally shown first by the appearance of free Ammonia in the filtrate indicating that the vegetable matter is coming through in a dissolved and probably decomposed condition.

Samples are taken from each of the filter beds working every day and results are sent to the Water Engineer so that he can see how each bed is progressing.

Samples from the service reservoirs at Pearls Hill and Mount Emily were analysed daily. In every case they were free from contamination. This is very satisfactory as these samples represent the water that is delivered to the town.

Samples from various taps were analysed daily and the results were always satisfactory.

The colour of the water from a tap in my laboratory is taken daily in a two foot tube by a Lovibond's Tintometer. The colour depends mainly on two things viz. the colour of the raw water and the amount of filtered water pumped as compared to the amount of unfiltered water. The yellow figure is the most important figure as the higher this is the greater is the amount of vegetable matter in the water. The colour has varied very considerably throughout the year and on the whole has been worse than the previous year. This is probably due to the fact that the Woodleigh filter beds were out of action for over six months. At the beginning of the year the yellow figure was about 2 but this increased to about 9 during the dry weather. At the end of the year it varied between 4 and 5 when the Woodleigh filter beds come into action again the figure should drop to below 2.

Samples from the Seletar area were analysed daily. The contamination of this supply was not anything like as frequent this year as last. When this supply was being pumped into the reservoirs it was chlorinated and analyses were made daily of the chlorinated and unchlorinated supply.

Chlorination of the unfiltered supply from the Kalang River Reservoir took place at Woodleigh during the first half of the year. The amount of chlorine added was about $\frac{1}{2}$ part per million. Examination of the water after contact for from eighteen to twenty-four hours showed no trace of free chlorine.

I append the results of chemical analyses of average samples of water taken from the two impounding reservoirs and an average sample of filtered water.

			RESULTS EXPRESSED IN PARTS PER 100,000		
			Thomson Road Reservoir	Kalang River Reservoir	Filtered Water
Total Solids	...	...	2.22	2.57	0.88
Total Organic Solids	...	...	1.17	1.37	0.40
Total Inorganic Solids	...	...	1.05	1.20	0.48
Suspended Organic Solids	...	...	0.80	0.92	0.03
Suspended Inorganic Solids	...	...	0.62	0.69	0.01
Dissolved Organic Solids	...	...	0.37	0.45	0.37
Dissolved Inorganic Solids	...	...	0.43	0.51	0.47
Chlorine as Chlorides	...	...	0.03	0.03	0.03
Free and Saline Ammonia	...	...	Absent	Absent	Absent
Albuminoid Ammonia	...	..	0.005	0.006	0.001
Nitrogen as Nitrites	...	...	Absent	Absent	Absent
Nitrogen as Nitrates	...	...	Absent	Absent	Absent
Oxygen absorbed in 15 minutes at 84° F	...	...	0.020	0.025	0.010
Oxygen absorbed in 4 hours at 84° F	...	...	0.070	0.078	0.031
Total Hardness	...	...	0.5°	0.5°	0.5°
Temporary Hardness	...	...	0.0°	0.0°	0.0°
Permanent Hardness	...	...	0.5°	0.5°	0.5°
Poisonous Metals...	...	...	Absent	Absent	Absent
Iron	...	...	0.10	0.10	Absent
Appearance in 2 ft. tube	...	...	Slightly Turbid	Slightly Turbid	Clear
Colour in 2 ft. tube Lovibonds Yellow	...	...	5.6	6.0	1.4
Do.	do.	Red	1.0	1.2	0.3
Do.	do.	Blue	0.6	0.5	1.0
Microscopical Examination of Residue	...	...	Fungi and Vegetable Debris	Fungi and Vegetable Debris	Few Fungi
Reaction	...	...	Neutral	Neutral	Neutral

Johore Waters

Thirty nine routine samples from Gunong Pulai were analysed.

All these samples were free from unoxidised sewage matter and other harmful contamination.

This water is very similar in quality to the present Singapore supply. It is quite safe from the Public health point of view and the only objections to it are the vegetable matters dissolved and suspended in it and also a small amount of suspended inorganic matter. It however contains much less vegetable matter than our reservoir supplies probably because it does not remain stagnant in a reservoir.

I append a representative analysis of samples.

				Results expressed in parts per 100,000
Total Solids dried at 150°C	...	...	...	2.91
Organic Solids	...	...	...	0.73
Inorganic Solids	...	...	...	2.18
Free and Saline Ammonia	...	...	...	Absent
Albuminoid Ammonia	...	...	...	0.003
Chlorine as Chlorides	...	...	...	0.05
Nitrogen as Nitrites	...	...	...	Absent
Nitrogen as Nitrates	...	...	...	Absent
Oxygen absorbed in 15 minutes	...	...	...	0.017
Oxygen absorbed in 4 hours	...	...	...	0.058
Total Hardness	...	...	...	0.5°
Temporary Hardness	...	...	...	0.0°
Permanent Hardness	...	...	...	0.5°
Poisonous Metals	...	...	...	Absent
Appearance	...	...	...	Clear and Bright
Colour in 2 ft. Tube Lovibonds	Yellow	...	...	1.1
Do.	do.	Red	...	0.6
Do.	do.	Blue	...	0.7
Reaction	...	...	...	Neutral

131 samples of water were analysed from the experimental Drifting Sand Filter installed at Gunong Pulai.

The object of these analyses was to determine whether this type of rapid filter was as efficient as others that had been tested before e.g. the Jewell Filter.

The preliminary tests which were made indicated the following features.

(1) That the character of the raw water changed very considerably in short periods. This was due to the fact that the raw water was taken from a stream and not a reservoir. Directly there was any rain the water in the stream became turbid.

(2) That the filtered water fifteen minutes after the filter started showed every indication that it was contaminated with unoxidised sewage matter. After half-an-hour's run this did not show. It either indicated that the sand had not been washed back sufficiently well or that if this type of filter were put into use all the water filtered during the first half hour of any run would have to be run to waste.

(3) That directly the character of the raw water changed the character of the filtrate changed. For instance if the raw water became turbid the filtrate became slightly cloudy.

(4) That the filter ceased functioning properly after two days run.

The next results proved worse as at the end of 24 hours the filter had broken down thoroughly.

The Engineer in charge of the filter then tried to improve matters by dosing the raw water with large quantities of Alum and not adding any lime. I was obliged to point out that as the raw water contained practically no temporary hardness it was useless to add alum in any quantity unless lime or soda ash were added. All the alum would pass through in the dissolved state and would not be precipitated and would therefore be useless to bring down the impurities.

I then suggested various experiments which should be tried on experimental runs in which the amount of alum and lime were varied.

In these experiments it was noted that when the weather was dry during the experiment, that the results were good. This was in my opinion undoubtedly due to the fact that the raw water was of good quality throughout the experiment and did not suffer any changes for the worse as always happened after a fall of rain.

I therefore reported that as this filter had been set up as an experimental one for the water that Gunong Pulai Reservoir would supply it seemed unsatisfactory that the water supplied to this experimental filter could and did change very considerably from hour to hour whereas the water from the reservoir would remain constant for weeks at a time in spite of heavy rain. I quite realized that it would appear to be impossible to get a supply of raw water of fairly constant composition especially during rainy weather but the point in my opinion was whether it was worth while experimenting on a continually changing raw water.

Since then no samples have been sent for analysis.

Well Waters

Three samples were taken and all were condemned as unfit for use owing to heavy contamination with unoxidised sewage matter.

The small number analysed is due to the fact that practically all the wells within Municipal limits have already been closed.

It is impossible for any well in a closely populated district to yield an uncontaminated supply. Furthermore wells in less populated districts are subject to at least intermittent contamination owing to the habits of those using them and unless a well is carefully constructed, guarded and rules laid down how to use it, it is impossible to get a safe one in this country.

Miscellaneous Waters

Forty eight samples were analysed.

Twenty were from Mandai Quarry. This water is dosed with chlorinated lime and results this year show that the dosing was not done to excess

as last year. However the chemical results show that this water is not of the highest quality and on occasions there has been a distinct suspicion about it.

Ten samples were sent in by the water Engineer for decision as to whether water running down drains alongside roads was due to broken mains or to natural causes.

Eighteen samples were forwarded by the Anti-Mosquito Department to determine the saline content.

Sewages, Effluents, etc., from Municipal Sewage Works

1,231 samples were received for analysis and these consisted of samples from :—

Crude Sewage	...	...	245
Imhoff Tanks	...	...	251
Filter Beds	...	...	488
Fall ...	...	...	244
Special samples	...	...	3

The crude sewage has been quite strong throughout the year but on occasions has varied very considerably. For instance in one month the suspended matter varied from 190 to 42 parts per 100,000.

The Imhoff tanks have worked very well during the year and have delivered a sewage of very even strength.

The granite beds worked fairly well at the beginning of the year and then deteriorated somewhat. However they recovered about September and then continued to give a fair effluent to the end of the year.

The coral beds have continued to be overworked during the year in spite of that have done fairly well.

I must say that I still consider that from a purification point of view results have shown that coral is a better medium than granite for the composition of contact beds in this climate. The granite beds have been treated with particular care whereas the coral beds have had as much work as possible put on to them. In spite of this the coral still continues to deliver a fairly good effluent.

During the year it was noticed that a white deposit was forming round the weep holes of the coral beds and in the channels. The deposit was found to be practically pure calcium carbonate. This was, I think, due to the action of Carbon Dioxide on the coral producing the soluble calcium bicarbonate. This on exposure to air losses the carbon dioxide and the insoluble calcium carbonate is precipitated. This deposit was formed during the time when a good deal of sea water was finding its way into the sewage and I suggested that this fact might have caused the carbon dioxide producing organisms to increase and decreased the other organisms. In all probability the solvent action has been going on slightly ever since the beds were laid down, but the sudden salting had upset the balance of power and caused the carbon dioxide producing organisms to increase.

The special samples were from the Singapore River above the outlet of the sewage work. The analyses showed that during dry weather the river

itself is worse than the sewage effluent both as regards oxidisable matter and suspended matter and that during rainy weather although the oxidisable matter decreases the suspended matter is more in the river.

As indicated in a previous paragraph the chloride content of the sewage has been very abnormal on occasions owing to the fact that sea water had been getting into a sewer trench.

I append some typical results of analyses made during the year.

	Results expressed in parts per 100,000		
	Crude Sewage	Tank Effluent	
Free Ammonia ...	4.4		6.2
Albuminoid Ammonia ...	4.1		2.6
Nitrogen as Nitrites ...	Present		Present
Nitrogen as Nitrates ...	Trace		Trace
Oxygen absorbed in 4 hours ...	16.93		11.73
Reaction ...	Alkaline		Alkaline
Suspended Matter ...	88.0		30.6
Suspended Organic Matter ...	68.4		26.1
Suspended Inorganic Matter ...	19.6		4.5
Chlorine as Chlorides ...	153.0		159.0

Effluents	Coral Bed	Granite Bed	Fall
Free Ammonia ...	1.52	0.48	3.10
Albuminoid Ammonia ...	0.28	0.20	0.52
Nitrogen as Nitrites ...	Present	Present	Present
Nitrogen as Nitrates ...	Present	Present	Present
Oxygen absorbed in 4 hours ...	1.19	0.99	2.45
Dissolved Oxygen absorbed in 5 days ...	7.06	6.6	11.2
Reaction ...	Alkaline	Alkaline	Alkaline
Suspended Matter ...	3.9	2.1	5.2
Suspended Organic Matter ...	3.3	1.6	4.6
Suspended Inorganic Matter ...	0.6	0.5	0.6
Chlorine as Chlorides ...	138.0	126.0	170.0

Sewages and Effluents from Private Installations

One hundred and seventy six samples were analysed.

In the majority of cases the installations are fairly well looked after and the proper working of the plant depends to a great extent on the care which is taken of it. I have often noticed that when the tipper is dirty and the runnels of the distribution system are choked then the effluent is distinctly cloudy and not sufficiently oxidised. It cannot be expected that the system will work properly when owing to faults in the distribution of the tank effluent, only a comparatively small area of the filtering surface is being used. There can be little doubt that it would be far more satisfactory to have all these installations under the care of the Municipality when they would receive proper and constant cleaning.

The installations belonging to the Keppel Rest House A. P. C. has never been really satisfactory since it was opened in September 1923 and towards the end of last year it got very much worse. The tank effluent appeared to be running straight through the bed with practically no purification at all. Figures obtained on analysis were :—

	Results in parts per 100,000		
	Tank Effluent	Filtered Effluent	
Free Ammonia ...	3.1	3.0	
Albuminoid Ammonia ...	0.8	0.76	
Oxygen absorbed in 4 hours ...	7.73	5.75	
Suspended Matter ...	22.4	19.2	
Suspended Organic Matter ...	...	14.4	
Suspended Inorganic Matter ...	...	4.8	
Chlorine as Chlorides ...	7.6	7.4	

The above results show that no purification was taking place and the effluent flowing into the public drains was very offensive. After two analyses and an attempt at desludging I reported the matter to you.

The new installation for the Straits Trading Co., at Bushey Park worked very well and the fact that the effluent has to pass through two filtering areas gave very good results on the final effluent,

The new installation at Sea View Hotel required several alterations to make it work satisfactorily and the beds had hardly ripened at the end of the year.

On several occasions I have recommended that an installation be desludged and this has always had a beneficial effect.

Milks from Itinerant Vendors

Three hundred and nineteen samples were collected and handed to me for analysis,

Out of these 78 or 24.6 per cent. were adulterated. 70 or 22.3 per cent. were adulterated by the addition of water and 8 or 2.3 per cent. were deficient in fat.

The following table shows the total number of samples taken during the past ten years, the percentage adulterated and the average adulteration.

Year	Number	Percentage Adulterated	Average Adulteration
1916	288	33.0	18.4
1917	118	78.8	22.35
1918	20	85.0	42.6
1919	396	26.8	...
1920	807	18.3	13.1
1921	728	18.1	9.2
1922	819	15.4	13.6
1923	534	18.7	14.3
1924	444	17.8	19.2
1925	319	24.6	15.1

The average adulteration for added water was 15.1 per cent. and the following table classifies the percentage adulterations by the addition of water for the year.

Between 70 per cent. and 60 per cent. of added water	...	I
,, 60 ,, 50 ,, ,,	...	I
,, 50 ,, 40 ,, ,,	...	2
,, 40 ,, 30 ,, ,,	...	6
,, 30 ,, 20 ,, ,,	...	10
,, 20 ,, 10 ,, ,,	...	20
,, 10 ,, 4 ,, ,,	...	14
Below 4 ,, ,, ,,	...	16

The deficiencies in fat varied from 32.3 per cent. to 4 per cent.

No other form of adulteration was detected.

Tinned Milk

Forty nine samples were analysed. They were of the usual three varieties viz., natural milk, condensed unsweetened and condensed sweetened.

All the natural milks were up to the standards required by the Foods and Drugs Ordinance.

The samples of condensed milk were satisfactory except that in two cases the dilution clause was not properly stated. The vendors were warned that they must alter their labels and have them approved by the Colonial Secretary.

Milk Foods

Eight samples were analysed. One sample which the vendors wished to sell as an Infant's Food contained a large proportion of starch and which when prepared according to the instructions given on the label did not conform approximately in proportional composition to human milk, I informed the vendors that they must label the preparation "Not fit for infants under the age of six months."

The other seven samples were what they were represented to be.

Emulsified Milks

These are the products of dessicated skimmed milk powder, butter fat and water.

Fourteen samples were analysed and all were up to standard.

Cream and Ice Cream

Four samples of cream and six of ice cream were analysed.

All the creams were single creams containing from 25-28 per cent. of milk fat.

No preservatives were found.

One sample purporting to be ice cream consisted of frozen milk stiffened with a solution of starch.

The other five samples contained over 10 per cent. of milk fat. No thickening substances were found in them.

Butter

Six samples were analysed. All contained over 80 per cent. of milk fats and not more than 16 per cent. of water and therefore complied with our regulations.

Two contained Boric Acid but in each case the amount was under 0.5 per cent. the amount allowed by the Regulations.

Flour and Bread

Sixteen samples were analysed. Two samples of flour were suspicious of artificial bleaching otherwise all samples were in order.

Tea

Eighteen samples of tea were analysed.

In three samples of tea-dust the ash insoluble in water was over 5 per cent. which is the maximum allowed. In each of these three cases the dealers concerned promised not to import any more of this inferior tea-dust and further analyses of these brands will be made in the near future.

The other fifteen samples were up to standard,

Tinned Meats and Fish

Twenty three samples in all were analysed.

The food was in good condition and poisonous metals in solution were under the recognised limits.

Aerated Waters

One hundred and seventeen samples were analysed.

In a large number of the samples from smaller factories the poisonous metals lead and/or copper were found in solution. A report in each case was sent to the Chief Sanitary Inspector to take action.

The waters were also analysed to see if they were free from contamination. In several instances there were signs of unoxidised sewage matter. In one sample of soda water I found the larval case of a cockroach.

Sugar

All the eight samples analysed were up to the standard.

Quinine Sulphate

Of the twenty samples analysed one was badly adulterated by the addition of milk sugar. When an official sample was taken from the same shop for the purposes of prosecution the Inspector was served with pure quinine sulphate which passed all the B. P. tests.

All other samples were up to standard.

Aspirin

Four samples were analysed and two of these were inferior. The vendors were warned and their stocks surrendered.

Olive Oil

Four samples were analysed. One sample was proved to be ground-nut oil. The other three were up to standards.

Brandy

Five samples were analysed and of these three did not contain the requisite amount of Ethers and were consequently below our standards. These facts were made known to the Government Analyst.

Beer

Six samples of beer were analysed. These were all arsenic free. Three contained sulphur dioxide added as a preservative but in all cases the amount was under that allowed.

Samples from C. R. E. J.

One sample of Paint, three of Alum and one of granite were analysed and reports made.

Five samples of sewages and effluents were analysed and special report sent to you on the subject.

Samples from Municipal Engineer

One sample of Cement, one of Limestone and two of Coral were analysed.

Two samples were analysed for the Bridge Engineer.

Samples from Electrical Engineer

Seven samples of Transformer Oil were analysed.

Eight samples of coal were analysed and their calorific values determined.

Samples from Gas Engineer

Five samples of coal, one of coke, three of spent oxide and one of light oils were analysed and reports sent.

Samples from Water Engineer

Seven samples of sand, one sample of slime deposited on the floor of the concrete tank at Woodleigh where the chlorination of the raw water takes place and two samples of water for alum content were analysed.

Action of Water on Concrete Pipes

The following tests have been carried out during the year.

(a) Small cubes of concrete taken from one of the concrete pipes in use were dried in a vacuum dessicator over sulphuric acid and weighed.

These were then suspended in a jar of water kept in circulation by fresh water introduced at the bottom of the jar. No actual jet of water impinged on the concrete.

After a month the cubes were removed dried in the dessicator and again weighed.

Every piece had lost in weight and the percentage losses on the five pieces were 0.71, 0.85, 0.69, 0.77 and 0.68 or an average of 0.74 per cent.

(b) Concrete pipes sealed at one end have stood full of water for some time. After four or five days a very noticeable crust of calcium carbonate has formed on the surface of the water. This when broken up sinks to the bottom and then in four or five days another distinct crust is formed.

(c) A comparison of the amount of inorganic matter in the Kallang River Reservoir and the same water after it has passed through the concrete main has been made by weekly tests throughout the year. The tests still show that the water has a very distinct action on the concrete pipes.

The amount dissolved is less than reported in my previous tests and now averages about 20 lbs. per million gallons. The water is now flowing through at a faster rate but taking this fact into consideration it would appear that the action has slowed down to a certain extent.

(d) Three of the pipes in the concrete main were raised for examination about six months ago and when the slime has been removed it was evident that there had been cement dissolved away from the pipes as in considerable portions of the pipe and surface was quite rough with granites of sand protruding.

Samples from Health Department

One sample of Bleaching Powder and one of a liquid to be used for destroying insects by spraying were analysed.

Several samples of urine were examined for sugar and albumin.

I have the honour to be,

Sir.

Your obedient servant,

A. G. HARRINGTON,

F.I.C., F.C.S.,

Municipal Analyst.

THIRTEENTH ANNUAL REPORT

OF THE

MUNICIPAL BACTERIOLOGICAL LABORATORY

SINGAPORE

BY

Dr. P. S. HUNTER, M.A., M.B., Ch.B., D.P.H.

BACTERIOLOGICAL LABORATORY,
SINGAPORE, January, 1926.

TO,

THE MUNICIPAL HEALTH OFFICER.

SIR,

I have the honour to forward the report on the working of this department during the year 1925.

Public Health Examinations.

During the year 7,888 specimens were received for examination made up as follows:—

Malaria.

1,009 blood films were examined and in 325 or 32.2%, the malaria parasite was found. 159 were Subtertian, 154 Benign Tertian, 9 Quartan, and 3 mixed Subtertian and Benign Tertian. Of these positive films 98 came from Gunong Pulai, 45 from Mandai, 95 from Health department and 86 from Practitioners.

Tuberculosis.

407 specimens of sputum, 2 of urine, 1 of pus, and 1 of pathological fluid were examined. Tubercl bacilli were found in 102 of the sputa, and in 1 of the urine, the remainder of the specimens being negative. A few guineapigs were inoculated from different specimens but none contracted tuberculosis.

Typhoid and Paratyphoid Fevers.

In this group 405 examinations were made. 19 specimens of blood serum gave a positive Widal Reaction with the B. Typhosus and 2 with the B. Paratyphosus B. Cultures of 9 specimens of faeces, 2 of urine and 1 of blood gave negative results.

Dysentery.

474 examinations were made.

Amoebic:—389 specimens were examined in 62 of which the E. histolytica or its cystic form was found.

Bacillary:—85 specimens were examined by culture and the B. Dysenteriae (Shiga) isolated from 2, B. Dysenteriae (Flexner) isolated from 5, and B. Dysenteriae (Hiss and Russell) isolated from 11.

Cholera.

6 specimens of faeces and 1 of urine were examined. The cholera vibrio was not isolated in any case.

Plague.

54 specimens were examined in 31 of which the *B. Pestis* was demonstrated.

Rats :—4,217 rats were examined, and 8 *R. Decumanus* and 4 *R. Concolor* were found to be infected with Plague. 2,769 of these rats were brought to the laboratory alive and on these 8,511 fleas were found, or 3.1 fleas per rat. Of these fleas 8,470 were *X. Cheopis*, 9 *X. Astia* and 32 *Ctenocephalus*. The following table shews their distribution among the species of rats examined.

Fleas (A).

Rat	Number examined	<i>X. Cheopis</i>	<i>X. Astia</i>	<i>Ctenocephalus</i>	Total	Average per rat
<i>R. Decumanus</i> ...	2,195	6,794	...	31	6,825	3.1
<i>R. Rattus</i> ...	238	1,015	...	...	1,015	4.3
<i>R. Concolor</i> ...	204	372	9	1	382	1.9
<i>R. Musculus</i> ...	3	...	...	...	...	...
<i>Crocidura</i> ...	129	289	...	...	289	2.2
Total ...	2,769	8,470	9	32	8,511	3.1

The following table shews the species of rats examined during the year.

Rats (B).

Species	Male	Female	Total	Infected
<i>R. Decumanus</i> ...	1,439	2,074	3,513	8
<i>R. Rattus</i> ...	120	160	280	...
<i>R. Concolor</i> ...	107	168	275	4
<i>R. Musculus</i> ...	...	...	9	...
<i>Crocidura</i> ...	...	...	140	...

Cerebro Spinal Fever.

34 specimens of cerebro-spinal fluid were examined, and the meningococcus demonstrated in 25.

Diphtheria

509 throat swabs were examined, in 119 of which the Klebs Loeffler bacillus was found in culture.

Leprosy.

51 specimens were examined and acid-fast bacilli demonstrated in 27 of them.

Miscellaneous included :—

39 Specimens of Urine for General Examination.

24	"	for Causative Organisms.
5	"	Pus " "
3	"	Pathological fluid for Causative Organisms
I	"	Beer for Causative Organisms
8	"	Urine for Gonococci (3 + ve)
7I	"	Pus " (30 + ve)
3	"	Pus (eye) " (1 + ve)
I	"	Prostatic fluid for Gonococci (- ve)
535	"	Faeces for Intestinal Ova (34 Anky, 123 Ascaris)
I	"	Faeces (dog) " (Anky + ve)
2	"	Faeces (Horse) " (2 anky + ve)
I	"	Faeces (Bullock) for Coccidia (- ve)
2	"	Blood (dog) " Filaria (1 + ve)
2	"	Blood (Human) " " (- ve)
I	"	Blood (Human) " Septicaemia (- ve)
3	"	Blood (Human) " Different Count
2	"	Blood (Bullock) " Piroplasma (- ve)
I	"	Sputum " Pneumococci (- ve)
I	"	C. S. Fluid " " (1 + ve)
4	"	Serum " Sp Pallida (1 + ve)
4	"	Tumour
I	"	Fowl for Chicken Cholera (+ ve)
I	"	Urine for Amoebae (+ ve)

Water.

5,787 samples of Municipal Water were examined. As in previous year the examination consisted of (*a*) An estimation of the total number of colonies per c.c. growing on agar at 37°C (*b*) An estimation of the smallest quantity of the sample in which lactose fermenting organisms were present.

(a) and (b)

The following table shews the average results of analysis during the year :—

Source	Colonies per c.c.	Percentage samples showing faecal Organisms										
		- 50 c.c.	+ 50 c.c.	+ 25 c.c.	+ 15 c.c.	+ 10 c.c.	+ 5 c.c.	+ 2.5 c.c.	+ 1 c.c.	+ 0.5 c.c.	+ 0.1 c.c.	
Bukit Timah Raw Water	230	...	...	14	98.6	94.7	91.7	84.4	73.8	60.4	0.4	...
Woodleigh Raw Water	157	...	...	29.5	70.5	53.7	40.0	26.3	22.1	13.7	...	...
Mount Emily	175	7.8	92.2	85.1	84.4	76.1	70.0	57.0	42.2	32.2	...	...
Pearls Hill	216	0.9	99.1	92.8	91.5	83.3	78.1	64.8	45.1	27.5	...	...
Seletar	2,443	...	...	...	99.9	88.9	...	...	66.9	...	29.5	8.8
Tap Water	82	22.2	77.8	...	51.8	36.1	24.7	9.4	3.9	1.3	...	...

Other samples.

Analyses were made of water from Gunong Pulai (9) from Mandai Quarry (5), and also from wells (12). The results were reported to the various people concerned at the time.

Mortuary.

32 autopsies were made, the cause of death being :—

Bubonic Plague	...	...	21
Septicaemic Plague	...	...	2
Beri Beri	...	...	1
Mumps Broncho Pneumonia	...	...	1
Lobar Pneumonia	...	...	1
Chronic Nephritis	...	...	1
Malaria	...	...	1
Cellulitis (Neck)	...	...	1
Hepatic Cirrhosis	...	...	1
Cerebral Tumour	...	...	1
Tuberculosis of Lung	...	...	1

I have the honour to be,

Sir,

Your obedient servant,

P. S. HUNTER,

for Municipal Bacteriologist.

BACTERIOLOGICAL LABORATORY,
SINGAPORE, 12th December, 1925.

To,

THE HEALTH OFFICER,

SIR,

The following comments on some of the work done this year up to the end of November are forwarded in lieu of the 13th Annual Report which I shall not be able to write this year owing to going on long leave.

Malaria :—The number of blood films examined has been 928 and malaria parasites were found in 300 or 32.3 per cent. This is the highest per centage positive for 10 years, and is due largely to Gunong Pulai and Mandai Quarry. 163 blood films were received from Gunong Pulai 88 of which shewed Malaria parasites. The positive films received were

From Gunong Pulai	...	88	(54 S.T., 31 B.T. 3 Q.)
Mandai Quarry	...	44	
A.H.O.	...	90	
Practitioners	...	78	

The species of parasites found were

Subtertian	...	142
Benign Tertian	...	146
Quartan	...	9
Mixed Subtertian and Benign Tertian	...	2
Mixed Benign Tertian and Quartan	...	1

Plague :—52 specimens have been examined in 31 of which the *B. pestis* has been demonstrated as compared with 27 specimens with 11 positives last year. So far during the year 57 cases have been reported as against 20 last year. Cases have occurred each month except in June, August, September and October.

Rats :—During the 11 months 3,895 rats have been examined of which 8 (all *R. decumanus*) have been found infected with Plague. These infected rats were found as follows:—

DATE	NO.	PLACE.
March	...	I New Market Rubbish Centre.
April	...	I 535 North Bridge Road.
,"	...	I 148 Cross Street.
May	...	I Unknown received from Conservancy N.D.
,"	2	37 Havelock Road.
July	...	I Keng Cheow Street. Rubbish Centre.
November	...	I 335 Tanjong Pagar Road.

In the case of rat received in November from Tanjong Pagar Road the diagnosis of Plague was confirmed by animal inoculation. I append a table shewing the numbers and species of rats examined during the last eight years. The large number of decumanus is more noticeable this year than ever before, there being more than 10 decumanus for each *rattus*.

RATS EXAMINED.

Year	Total number of Rats	DECUMANUS.			RATTUS.			CONCOLOR.			Human Plague
		Total Infected	Male	Female	Male	Female	Total	Infected	Male	Female	
1918 ...	4,152	50	*834	*1,674	2,691	40	*199	*291	566	5	*167
1919 ...	945	...	190	324	514	...	60	65	125	...	59
1920 ...	104	3	13	26	39	3	16	11	27	...	11
1921 ...	...	...	...	...	...	...	...	...	...	...	...
1922 ...	53	...	...	...	...	...	...	...	...	...	...
1923 ...	510	18	156	260	416	17	21	28	49	...	10
1924 ...	• 1,218	...	227	700	927	...	76	109	185	...	24
1925 ...	13,895	8	1,333	1,966	3,299	8	105	135	240	...	82
											218
											136
											6
											...
											132
											57

* Sexes were differentiated only from 12th March, 1918 onwards.

† 11 months only.

Fleas :—The fact that Plague has been present in Singapore each year since 1,900 without ever assuming epidemic form or even having much effect on the death rates is rather extraordinary and at first it seemed to me that the work of Hirst in Colombo might help to explain it. Hirst found that the prevailing flea in Colombo and Madras was *X. astia*, not *X. cheopis*. As *X. astia* was described first by Rothschild in 1912 or 1913 and little work seemed to have been done on the rat fleas of Singapore since then, flea counts were made starting in June 1923 and they have been continued since, every flea being identified. During the 11 months of this year 7,868 fleas have been examined of which 7,829 have been *X. cheopis*, 9 *X. astia*, and 32 *Ctenocephalus (felis)*. Since this work was started 11,097 fleas have been caught and studied of which 11,051 have proved to be *X. cheopis*, 11 *X. astia*, and 35 *Ctenocephalus (probably felis)*. The 9 *astia* caught this year were all got on 1 rat in Amber Road, Tanjong Katong, rather an extraordinary occurrence.

The following tables shew the number of rats and fleas examined each month this year and the average number of fleas per rat.

R. Decumanus

Month	No.	Cheopis	Astia	Ctenocephalus	Average	Infected Rats
January ...	192	1,436	...	9	7.5	...
February ...	218	920	...	2	4.1	...
March ..	137	390	...	2	2.8	1 D
April ...	143	310	...	4	2.2	2 D
May ...	187	499	...	1	2.6	3 D
June ...	153	289	...	1	1.9	...
July ...	212	635	...	4	3.0	1 D
August ...	183	790	...	...	4.3	...
September ...	241	391	...	...	1.6	...
October ...	180	291	...	2	1.6	...
November ...	215	480	...	6	2.2	1 D
Total ...	2,061	6,431	...	31	3.1	8 D

(58-D)

R. Rattus

Month	No.	Cheopis	Astia	Ctenocephalus	Average	Infected Rats
January	13	23	...	...	5.6	...
February	4	53	...	...	13.2	...
March	5	103	...	...	20.6	...
April	6	47	...	...	7.8	...
May	8	30	...	...	3.7	...
June	28	192	...	...	6.8	...
July	34	106	...	...	3.1	...
August	9	18	...	...	2.0	...
September	32	50	...	...	1.5	...
October	42	47	...	...	1.1	...
November	21	136	...	...	6.4	...
Total	202	855	...	...	4.2	...

R. Concolor

Month	No.	Cheopis	Astia	Ctenocephalus	Average	Infected Rats
January	...	...	...	...	...	...
February	1	...	...	...	...	...
March	1	2	...	...	2	...
April	...	...	...	...	...	...
May	4	10	...	...	2.5	...
June	17	31	...	...	1.8	...
July	25	32	9	...	1.6	...
August	11	17	...	...	1.5	...
September	25	52	...	...	2.0	...
October	48	77	...	...	1.6	...
November	25	46	...	1	1.8	...
Total	157	267	9	1	1.7	...

C. Caerulea

Month	No.	Cheopis	Astia	Ctenocephalus	Average	Infected Rats
January	...	1	14	...	14.0	...
February	...	1	4	...	4.0	...
March	...	1	3	...	3.0	...
April	...	2	6	...	3.0	...
May	...	2	7	...	3.5	...
June	...	12	19	...	1.5	...
July	...	11	21	...	1.9	...
August	...	23	60	...	2.6	...
September	...	14	22	...	1.5	...
October	...	27	40	...	1.5	...
November	...	28	80	...	2.8	...
Total	...	122	276	...	2.1	...

The peculiar incidence of Plague in Singapore cannot then be explained by the lack of an effective transmitting agent for *X. cheopis* proves to be almost the only flea present on the rats here, and it is admitted by all to be the most effective vector. It is noticeable that though 8 infected decumanus were found the average number of fleas on decumanus was only 3.1 and the average during the month in which infected rats were found did not reach the average for the year. The average counts on *rattus* more nearly approach those on decumanus this year, 4.2 and 3.1 respectively, as compared with 5.6 and 2.7 last year. It may be that our safety from Plague lies in there being comparatively few *rattus* in Singapore, and that our population does not live in close contact with decumanus so that link between the infected decumanus and the human subject is largely wanting. It may be too that our rat Plague is always imported and rapidly dies out, and it would be interesting to find out whether the Singapore rat is very susceptible to Plague or not. I hope, while on leave, to study methods of doing this with safety for it will involve breeding and infecting large numbers of rats and it seems to me that it would be very desirable also to have a close liaison with the Port Health Office as regards trapping rats in lighters, twakows, or tongkangs, and that rats found in them after fumigation should be sent to this office. Collections of fleas from rats found there should be obtained.

Water.

The usual routine examination of water was carried out the results on the whole being satisfactory.

Special attention was paid to the streams entering McRitchie Reservoir on the Municipal Analyst's reporting sewage contamination in these streams at the end of last year. The results of examination of all the streams in

which definite evidence of recent faecal contamination was obtained, i.e. by isolation of organisms of the susceptible groups, in culture are summarised thus.

Reservoir	Stream	Total Count	Lactose fermenters in			Organisms isolated
			1 c. c.	.1 c. c.	.01 c. c.	
McRitchie...	I up	7,048	100	90	60	B. oxytocus perniciosus 2 times. B. No. 71 2 times.
,,	I down	4,375	100	80	50	B. coli communis ... 1 B. oxytocus ... 3
,,	2	1,011	100	60	10	B. oxytocus ... 4 B. No. 71 ... 3
,,	6	472	100	50	25	B. coli communis ... 4 B. No. 71 ... 1
,,	7	2,440	100	100	...	B. oxytocus ... 1
,,	13	1,230	100	100	50	B. oxytocus ... 3
Pierce	6	840	...	...	...	B. coli communis ... 2
,,	7	710	100	...	...	B. coli communis ... 2
,,	9	125	10	...	...	B. coli communis ... 2

The number of colonies studied from stream "I up" was 50, from "I down" 50, from 2, 55. The results shew that intermittent faecal contaminations occurs on other streams than those draining the golf course, and that our catchment areas are not entirely above suspicion.

Reaction of Water

The Hydrogen Ion concentration of the water from Peirce Reservoir was determined on 22 days by the use of the "B.D.H." Mixed Indicator and the water found to be practically neutral the pH varying from 6.8 to 7.6 the latter reading being obtained only once. On boiling to drive off CO₂ readings of from 7.6 to 8.5 were obtained. The tap water was very slightly to the alkaline side of neutrality giving a reading of 7.5 and 8.5 after boiling. Samples of water from Bukit Timah Filter beds were all to the acid side reading 6.0 and had taken up a good deal of CO₂, the reading after boiling being 8.0 to 8.5 i.e. definitely alkaline. It would appear that we are dealing with a slightly alkaline water brought to neutrality by dissolved CO₂. I hope to collect further information on this subject and methods of studying it when on leave.

I have the honour to be,

Sir,

Your obedient servant,

COLIN C. B. GILMOUR, M.A., M.B.,

Municipal Bacteriologist.

MIDDLETON HOSPITAL,
SINGAPORE, 20th January, 1926.

To,

THE MUNICIPAL HEALTH OFFICER.

SIR,

I have the honour to forward the Middleton Hospital annual report for the year 1925.

Summary of cases treated at Middleton Hospital during the year 1925.

DISEASES		Remaining at the end of the year 1924	Admitted during 1925	Discharged	Died	Total remaining at the end of 1925
Plague ...	...	...	21	6	15	...
Small Pox	...	...	9	7	1	1
Cerebro Spinal Fever	...	...	7	1	6	...
Chicken Pox	...	7	277	281	...	3
Diphtheria	...	5	32	27	6	4
G. Measles	...	...	7	7	...	...
Measles	...	1	49	50	...	...
Erysipelas	...	...	2	2	...	...
Tuberculosis	...	...	1	...	1	...
Mumps ...	...	...	27	26	...	1
Whooping Cough ...	...	...	4	3	...	1
Enteric Fever	...	...	1	1	...	...
Observation	...	...	19	19	...	...
Other Disease	...	...	17	14	3	...
Total	...	13	473	444	32	10

At the end of 1924 there were 13 patients in Hospital, viz.:—

7 Chicken-pox, 5 Diphtheria, 1 Measles.

During the year 1925, there were 473 admissions.

I. Other diseases.—17 cases admitted for observation or said to be suffering from one of the notifiable infectious diseases, were found to be suffering from the following diseases:

1 Pneumococcal Meningitis. 2 Pyrexia of unknown Origin. 1 Pneumonia.
2 Syphilis. 1 Herpes. 1 Convulsions. 1 Debility. 1 Frambaesia. 3 Adenitis.
1 Nephritis. 1 Oedema of Pharynx. 2 Dermatitis.

In this series there were 3 deaths.

Viz. 1 *Convulsions*. 1 *Pneumonia*. 1 *Pneumococcal-Meningitis*. The remainder were discharged or transferred to other Hospitals.

II. *Observations*.—19 contacts were kept in Hospital for one or more days.

III. *Diphtheria*.—32 cases were admitted and 5 remained from last year-total 37. Of these 27 recovered, 6 died and 4 remained in Hospital at the end of the year.

IV. *Plague*.—21 cases of Bubonic Plague were admitted of which 15 proved fatal.

V. *Small-pox*.—9 cases were admitted, 7 were discharged, 1 died, and 1 remained in Hospital at the end of the year. 5 were of the discrete type, 3 of the Confluent, and 1 of the Haemorrhagic variety.

Three of the discrete type were vaccinated, the others were unvaccinated.

VI. *Chicken Pox*.—277 cases were admitted during the year. Of this total 75% occurred amongst adult Tamils.

VII. *Cerebro-Spinal Fever*.—7 cases were admitted during the year. 6 died, and 1 recovered.

The following table shows the admission to Middleton Hospital during the past ten years.

DISEASES	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925
Cholera ...	...	2	...	45	...	...	...	5	...	...
Small-pox ...	70	30	10	11	3	139	248	2	8	9
Plague ...	11	26	66	7	30	16	20	29	11	21
Chicken-pox ...	95	35	28	18	39	98	103	172	210	277
Diphtheria ...	...	3	1	2	15	20	13	18	17	32
Cerebro Spinal Fever ...	...	5	...	14	27	57	29	6	13	7
Influenza ...	...	...	70	23	14	5	1	...	...	...
Measles ...	...	...	...	...	...	39	23	20	29	49
Erysipelas ...	...	...	...	...	...	9	3	8	5	2
Mumps ...	...	...	...	...	...	25	...	6	...	27
Whooping Cough ...	...	...	...	...	...	1	...	3	1	4
Typhoid Fever ...	...	...	...	...	...	1	...	1	...	1
Pulmonary Tuberculosis ...	...	...	...	...	...	5	4	2	...	1
German Measles ...	...	...	...	...	...	...	1	...	21	7
Scarlet Fever ...	...	...	...	...	...	...	1	...	...	...
Observation (Contacts) ...	...	...	...	...	...	...	...	...	...	19
Other diseases... ...	28	19	34	55	46	61	58	15	41	17
Total ...	204	120	209	175	182	476	504	282	361	473

I have the honour to be,

Sir,

Your obedient servant,

A. THURAI,

House Surgeon,

Middleton Hospital.

SINGAPORE, 20th February, 1926.

TO,

THE MUNICIPAL HEALTH OFFICER,

SIR,

I have the honour to forward the following report on the work of the Anti-mosquito branch of the department during 1925.

Permanent Works

New works were carried out during the year in the following areas :—

- (1) Bukit Timah Golf Course
- (2) Keppel Golf Course
- (3) Chancery Lane—Thomson Road
- (4) Balestier Road ravine
- (5) Barker Road
- (6) Swiss Cottage Estate
- (7) Tanglin Road
- (8) Mount Pleasant and Mount Rosie ravines

Bukit Timah Golf Course.—All the streams in the ravines on the cleared portion of the Kallang catchment area which forms the golf links were found to be breeding a large number of *A. maculatus*.

Eight ravines were treated by deepening and straightening the stream beds, and laying subsoil pipes in the floors. Contour drains were made where necessary.

The pipes discharge through concrete spillways into lagoons.

A. fuliginosus and *A. sinensis* were found breeding in the lagoons.

The lagoons were deepened, the sides trimmed, and vegetation removed, thus allowing the fish better access to larvae.

The total length of pipes laid was :—

8" subsoil pipes 5,008 yards.

Keppel Golf Course.—*A. karwari* were found in large numbers in the swampy floor of a short ravine below the club house.

The outlet drain under the railway was deepened to Telok Blangah Road.

A contour drain was cut along the toe of the ravine slope above the outcropping seepages. Subsoil pipes were laid and led to discharge into the culvert under the railway.

The total length of pipes laid was :—

8" subsoil pipes 200 yards.

Chancery Lane--Thomson Road.--This area is a short ravine at the corner of Chancery Lane and Thomson Road.

A. karwari were found breeding in the swampy floor of the ravine.

The swamp was caused by the culvert under an approach road which crosses the ravine being too high.

The culvert was lowered and an eighteen inch anti-malarial type drain constructed with slab revetments.

Contour drains were cut where necessary and subsoil pipes laid.

The total length of concrete channel and of subsoil pipes laid was :—

18" open concrete channel	156 yards
8" subsoil pipes	175 yards

Balestier Road Ravine.--A. karwari were found breeding in a ravine at the back of the Tan Tock Seng Hospital.

A stream runs through the ravine and discharges into the roadside drain at Balestier Road.

The stream bed was deepened and contour drains cut to trap seepages.

Subsoil pipes were laid and led to discharge into the stream.

The stream was also piped in the upper half and the contour pipes connected up.

These pipes discharge through a concrete spillway.

The following pipes were laid :—

8" subsoil pipes	270 yards
6" subsoil pipes	74 yards

Barker Road.--The dangerous breeding places in this area had been regularly oiled for a considerable time.

The low level culvert recently laid near the railway provided a sufficient depth for the laying of subsoil pipes.

The roadside ditches were deepened and contour drains cut above the seepages.

Subsoil pipes were laid and led to discharge into the deepened roadside ditches.

8" subsoil pipes 358 yards

Swiss Cottage Estate.--The breeding places of A. karwari were dealt with by laying subsoil pipes along the foot of Wayang Satu Hill.

Many A. sinensis breeding places were drained off by the construction of an open concrete channel around the estate.

The total length of concrete channel and of subsoil pipes laid was :—

21" Open concrete channel	848 yards
8" Subsoil pipes	244 yards
6" Subsoil pipes	84 yards

Tanglin Road Ravine.—This ravine is situated on the Bank of Taiwan property opposite Mount Echo.

A large number of anopheline and culicine mosquitoes were found breeding in the swampy floor.

Contour drains were cut and subsoil pipes laid which discharge into the culvert under the approach road to "Ben Venue."

8" subsoil pipes 131 yards laid.

Mount Pleasant and Mount Rosie.—The work of draining these ravines commenced during the latter part of the year.

The following anophelines were found breeding in this area.

A. karwari, A. fuliginosus, A. sinensis and A. rossi.

The clearing of silt from the Sungei Whampoe dropped the water level at the head of the stream by two and a half feet.

This allowed a drain to be commenced at this point, three feet in depth, which was continued under the approach road following the boundary of Crown land to the experimental fish ponds.

The drain through the ponds is over five feet in depth and the area is rapidly drying out.

The drainage of many large ponds behind the Thomson Road police station has now been made possible.

Minor Works and Maintenance.—Repairs and extensions to existing works were carried out at:—

Mandai Quarry.—The heavy floods in January caused considerable damage in the ravine behind the engineer's bungalow. 137 yards of eight inch subsoil pipes were taken up and relaid.

To prevent further scour in the floor, a contour drain was cut around the top of the ravine for a distance of 924 yards.

A. maculatus were found breeding in large numbers in the low lying area on the right of the approach road.

All trees were removed from the floor of the ravine and the main stream deepened for 275 yards.

The breeding places were dealt with by cutting contour drains and laying subsoil pipes.

A breeding place of *A. karwari* below the granite tip was also dealt with.

The total length of extension was:—

8" subsoil pipes 464 yards
6" subsoil pipes 104 yards

Tanglin Barracks No. I Area.—The subsoil pipes in the head of the ravine had become blocked with silt and on examination a large number were found to be eroded.

All the pipes running down the centre of the ravine were taken up and the trench deepened and regraded.

A twelve inch open concrete channel was laid with slab revetment in place of the subsoil pipes from the culvert under Hospital Road to the existing anti-malarial type channel.

12" open concrete channel 280 yards

Tanglin Hill No. I Area.—A similar condition was found in this area to that in Tanglin Barracks.

The pipes in the floor were replaced with an open concrete channel with slab revetment from the culvert to the anti-malarial channel in the Barracks area.

12" open concrete channel 223 yards

One Tree Hill Area.—The pipes at the head of this ravine were found to be eroded, a large number having collapsed altogether while washouts occurred after every rainstorm.

In addition to storm water the pipes had to carry sullage water from houses in Grange Road.

The ravine floor was thrown open and the trench regraded at a lower level.

An open concrete channel was laid from the culvert at One Tree Hill to the existing anti-malarial channel.

A branch drain was laid to take sullage water from Grange Road.

12" open concrete channel 290 yards

Woodleigh Area.—*A. maculatus* and *A. karwari* were found in a short ravine subsidiary to No. I ravine.

Rubber trees were removed and the springs trapped by laying subsoil pipes in contour drains.

8" subsoil pipes 50 yards
6" subsoil pipes 40 yards

Holland Park Area.—The low lying area running parallel to Holland Road has always been in an unsatisfactory condition during wet weather, when *A. karwari* and *A. fuliginosus* could be found in seepages along the toe of the hill.

The main roadside ditch was deepened and contour drains cut above the seepages.

The same treatment was carried out below the slope on the Holland Road side of the Anti-malarial channel.

Subsoil pipes were laid and led to discharge into the deepened roadside ditch.

8" subsoil pipes 138 yards
6" subsoil pipes 89 yards

In the remaining fifty-seven anti-malarial areas small extensions were made to trap dangerous seepages at:—Nassim and Dalvey area, Jervois Road area, Leonie Hill area, Orchard Road No. 1, Shanghai Road, Cluny Ravine, Kings Road, Watten Estate and Wishart Ravine.

Work in these areas called for the use of :—

9" subsoil pipes 60 yards
6" subsoil pipes 250 yards

Anti-Mosquito Work.—A definite scheme for the systematic reduction of mosquito breeding grounds has been in operation during the year.

The major works gangs have worked within a restricted district bounded by Lavender Street, Sungei Whampoe, Mount Pleasant, Bukit Brown, Cluny Station, Holland Road, Alexandra Road to Bushey Park.

A certain amount of attention is necessary to all areas where work has been completed by these gangs as unless it is maintained it rapidly reverts back more or less into its original condition especially where vegetable gardens have been dealt with.

This restricted district was split into three areas. (1) General Hospital area. (2) Tan Tock Seng Hospital area. and (3) Tanglin Residential area.

A petrol gang was commenced on the General Hospital area in March.

Their work consists of abolishing small breeding grounds by draining or filling, removing undergrowth, clearing and regrading earth drains, filling old wells, cutting minor drains where necessary, collecting tins and other water containing receptacles.

Several breeding places of dangerous Anopheline mosquitoes have been discovered in the course of the routine duties of these gangs. The Kampongs behind the Asylum in Radin Mas, in Silat Road and in Tiong Bahru have been cleared up considerably and mosquito breeding has been greatly reduced.

Extensive clearing and draining was carried out around the Tan Tock Seng Hospital with a view to starting a patrol gang in this area.

The Sungei Whampoe was cleared of silt with the result that the water level of the stream was considerably lowered. This allowed excellent drainage for the low lying area between the river and Balestier Road. All overhanging trees and shrubs were removed.

The bunding of tidal creeks prior to filling at the Mount Zion Reclamation was responsible for the production of extensive breeding grounds for Culex Sitiens.

These creeks were regularly oiled and when filling is completed this district should be comparatively free from this mosquito.

Numerous complaints of the prevalence of mosquitoes were received from the Katong district and a patrol gang was put to work on this area.

The usual clearing and draining was carried out.

The bund at Grove Estate was extended to the road reserve near Rose Lane.

A one foot pipe was laid under the reserve road and, with permission, a deep drain was cut to the water gate on Grove Estate.

The former stagnant drains at Tanjong Katong Road are now almost dry. This drainage was extended through the cocoanut plantation. By constructing a small wooden culvert the drainage from Haig Road was provided with an outlet.

Many insanitary kampongs within the patrol gang areas were cleared up and rubbish either burnt or buried.

Anti-Stegomyia Work.—During the year mosquito larvae were found by sanitary inspectors during their daily rounds in 31,966 houses or 20.47% of those visited.

203 notices were served under the destruction of mosquitoes ordinance.

I have the honour to be,

Sir.

Your obedient servant,

W. DAWSON,

Deputy Health Officer.

MUNICIPAL HEALTH OFFICE,
SINGAPORE, S.S.

10th February, 1926.

TO,

THE HEALTH OFFICER,
SINGAPORE, S.S.

SIR,

I submit herewith my Sixth Annual Report on the repair and upkeep of the Municipal Markets, inspection of Foodstuffs exposed for sale in them and also in the Town generally.

MUNICIPAL MARKETS.

(a) **Cleansing.**

The markets have been carefully controlled from the sanitary point of view all garbage, etc. being rapidly collected and removed to dumps. Flushing operations are worked from a schedule each coolie having a particular job and a specified time in which to do it. Thus all tables and stalls receive attention seriatim.

On Chinese New Year's Day the Annual Cleansing took place after all goods had been removed. During the process the following number of rats were killed.

			Rats	Mice
Clyde Terrace	...	...	103	...
Ellenborough	...	...	61	55
Telok Ayer	...	...	12	21
Orchard Road, Kandang Kerbau & Rochore			Nil	

This is a great reduction on 1921 figures (1,165) which I put down to the fact that platforms are placed on and under all stalls and periodically whitewashed.

(b) **Repairs.**

A full list of requirements was submitted to Municipal Architect on 14th April. Tenders were called for and work commenced in all markets except Clyde Terrace in July and completed within contract time.

Clyde Terrace however was earmarked for alterations in the shape of a new vegetable section built on concrete piles over the sea at right angles to Fish Section, which also needed all its understructure strengthening. This work was commenced in August and at end of year was fairly advanced.

Orchard Road. To allow of a car park being made in front of the market the boundary wall was put back some 7 feet in May. This necessitated removal of some vegetable and fruit stalls which are to be accommodated in a new shelter nearing completion on Cuppage Road side of the Market.

While this was being done electric light was installed a great improvement on old system of hurricane lamps.

(c) Unsound Foodstuffs.

In all 35,197 catties of unsound foodstuffs were destroyed. Only three prosecutions were necessary resulting in fines to a total of \$15. It will thus be seen that the option of surrendering unsound foodstuffs is made good use of.

(d) Quantity of Foodstuffs.

The total quantity of recorded foodstuffs was 1,639 piculs less than for 1924 but the value (approximate) increased by \$636,000. This would indicate a rise in cost of living as I estimate rise in values to be about 7-10% over 1924 prices.

Below is a table of prices of some of the principle articles of food, showing highest and lowest prices obtaining for each year from 1922-1925 with a 1914 price as a basis of comparison.

Article	Quantity per	8.8.14 Average Price	1922			1923			1924			1925		
			Highest	Lowest	cents	Highest	Lowest	cents	Highest	Lowest	cents	Highest	Lowest	cents
Beef	...	Kati	24/27	28	cents	40	39	cents	43	48	cents	45	45	cents
Mutton	...	"	35	43	cents	73	50	cents	73	80	cents	80	80	cents
Pork	...	"	38	61	cents	68	60	cents	66	68	cents	60	60	cents
Tea	...	"	50	76	cents	90	76	cents	95	88	cents	95	95	cents
Coffee beans	...	"	36	1.05	cents	70	50	cents	48	45	cents	48	48	cents
Sugar	...	"	45	45	cents	32	20	cents	17	12	cents	13	13	cents
Salt	...	"	07	17	cents	05	04	cents	03	03	cents	03	03	cents
Potatoes	...	"	02	02	cents	04	03	cents	04	03	cents	03	03	cents
Yams	...	"	8.5	8.5	cents	10	14	cents	14	12	cents	10	10	cents
Onions	...	"	03	1.2	cents	03	06	cents	08	03½	cents	04	04	cents
Geese	...	Each	6/7	18	cents	08	13	cents	07	12	cents	06	06	cents
Ducks	...	Dozen	\$1.50-2.10	4.50	cents	2.25	3.50	cents	2.50	2.50	cents	...	...	cents
Pigeons	...	Pair	\$5-\$7	15.50	cents	9.00	13.20	cents	9.00	11.40	cents	\$8.40	\$8.40	cents
Eggs (hens)	...	Dozen	75	1.60	cents	80	1.50	cents	1.00	1.20	cents	1.30	1.30	cents
Capon	...	Kati	30	84	cents	52	60	cents	48	54	cents	55	55	cents
Fowls	...	Each	42	1.00	cents	45	87	cents	50	78	cents	85	85	cents
Rice	...	Gantang	40/70	2.75	cents	80	2.10	cents	60	46	cents	2.10	2.10	cents
			\$6.50	54	per picul	50	45	per	63	50	per	56	56	per
					gantang	gantang	gantang	per	gantang	gantang	per	gantang	gantang	per
														gantang

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(e) Revenue.

Market	1921	1922	1923	1924	1925
	\$ cts.				
Clyde Terrace ...	134,723 52	131,544 61	142,099 13	144,159 61	150,812 40
Ellenborough ...	139,257 33	121,651 39	111,677 12	109,563 23	110,419 43
Telok Ayer ...	42,790 21	44,282 44	43,830 52	38,317 92	35,726 99
Orchard Road ...	13,927 04	14,380 00	14,740 00	14,403 00	14,275 00
Kandang Kerbau	13,632 43	16,356 50	15,433 00	16,647 50	17,835 00
Rochore ...	10,752 62	10,685 00	9,155 00	9,305 00	9,330 00

5 per cent. Commission.

Market	1922	1923	1924	1925
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Clyde Terrace ...	56,635 61	71,661 13	74,272 61	81,793 40
Ellenborough ...	70,791 47	64,123 12	64,245 23	66,911 43
Telok Ayer ...	4,438 44	3,920 52	3,038 92	2,841 99
Total ...	131,865 52	139,704 77	141,556 76	151,546 82

A glance at the above tables together with the Return of Foodstuffs passing through the Markets will show that although less wet fish passed through than in 1924 the 5 per cent. Commission increased by \$10,000 clearly proving increase in cost of fish.

Revenue from stalls varies by very little since licensing has been in vogue. Telok Ayer Market is seriously effected by Peoples Park Hawkers' Shelters and hawkers in adjacent lanes. The quantity of fish brought here is also diminishing rapidly.

Kandang Kerbau Market however, is getting more popular, over \$200,000 worth more than last year being sold.

(f) Prices.

At various times during the year under review prices jumped up. The trouble in China was said to be the cause of the rise in cost of imported vegetables in June. Again in October flood in the F.M.S. damaged the vegetable gardens and scarcity of supply again caused a rise.

Rough seas during monsoons when no fish could be landed made them scarce and dear and finally the boom in rubber with consequent increased employment and wages altered the balance of supply and demand and shop-keepers took the opportunity to put up their prices.

(g) Licenses.

Renewals at beginning of year follow routine custom.

(h) Staff.

I returned from home leave on 18th February.

No change in staff of Keepers took place.

Thirty-seven coolies reported sick during the year, seven of whom were sent to hospital and on discharge resumed work.

(i) **Market Byelaws.**

There were 102 prosecutions under this heading resulting in fines of \$182.50.

(j) **General.**

SALTER'S SCALES.—More suitable types of scales were sent out by makers and have been given a trial in Clyde Terrace Market. No decision however has yet been arrived at regarding general introduction.

Two Toledo balances were ordered from America to be used as check scales in Markets. Owing, however, to some parts arriving broken and the long wait for renewals, at the end of the year they had not been installed.

TELUK AYER WATER-CARRIAGE SYSTEM.—Several serious chokages resulting in flooding of the Market occurred. A double grid over gullies the bottom one to be cemented in would I think prevent this.

Town.

CHINESE BEAN CURD.—As reported last year the Colonial Secretary took this matter up and importation in tins was forbidden as from 1st July.

MEASLY PORK.—A very bad case was discovered in Rochore Road and was seen by all H.O.'s. This had evidently been slaughtered illegally.

Action, resulting in a \$75 fine was taken.

As a result of visits to stores, shops and hawker's pitches 26,171 cases, tins, etc. of unsound foodstuffs were surrendered and destroyed.

I attach summary of prosecutions undertaken, table of unsound foodstuffs destroyed, a return of some of the foodstuffs passing through the markets, together with a return of vacant stalls as on 31st December, 1925.

I have the honour to be,

Sir,

Your obedient servant,

M. N. MACMAHON,

Cert. R. San. Inst.,

Food and Market Inspector.

SUMMARY OF VACANT STALLS END OF DECEMBER, 1925.

FEE Market	\$30	\$15	\$15	\$12	\$15	\$10	\$6	\$15	\$10	\$5	\$15	\$30	\$5	\$5	\$10	\$7	\$5	TOTAL NO.	FEES. Collected ←
	Dry goods	Saltd. Vegetables	Beef	Mutton	Pork	Curry stuff	Bean cakes	Poultry	Vege-tables and fruit	Eggs	Money Changer and Cigar:	Eating Fish	Fish	Shell Fish and Tripang	HAWKERS	Greenness issued →			
Clyde Terrace	15	...	2	...	2	...	...	8	...	...	...	...	...	...	10	...	...	...	78 44
Ellenborough ...	2	...	...	...	1	...	...	9	22	...	...	1	...	4	...	...	...	39 66	(74-D)
Telok Ayer ...	15	4	1	...	4	...	...	2	23	...	...	2	1	...	3	6	14	...	72 66
Orchard Road	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	4 66
Kandang Kerbau	14	2	2	1	...	...	...	3	...	...	...	4	...	...	...	...	...	...	26 66
Rochore	...	2	...	...	...	...	...	...	...	...	...	4	8	...	13	...	...	...	27 66
																			246 66

M. N. MACMAHON,

Cert. R. San. Inst.,

Food and Market Inspector,

RETURN OF SOME OF THE FOODSTUFFS PASSING THROUGH MARKETS WITH THEIR APPROXIMATE VALUE, YEAR 1925

MARKET	Wetfish cts	Boiled fish cts	Shell fish cts	Beef cts	Mutton cts	Pork cts	HEADS				Approximate VALUE	
							Fowls	Capons	Geese	Ducks		
Clyde Terrace ...	5,481,104	33,409	7,027	321,668	25,170	310,207	18,247	...	560	16,616	...	305,472
Ellenborough ...	4,915,161	102,843	211,310	23,153	...	798,901	59,697	8,559	765	71,065	...	88,695
Telok Ayer ...	160,474	...	74,760	38,212	43,561	217,326	64,395	...	308	14,098	2,032	156
Kandang Kerbau ...	836,653	29,079	8,133	151,417	83,130	619,658	33,844	...	4,200	...	...	50,916
Orchard Road ...	513,625	58,349	...	330,053	29,770	284,593	43,546	45	...	4,657	4,055	...
Rochore ...	15,345	...	...	...	...	23,039	...	...	...	...	...	...
TOTAL ...	11,922,362	223,680	301,230	864,503	181,631	2,253,724	219,729	8,604	1,633	110,636	6,087	156
												502,711
												254,240
												5,711,515
												96

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M. N. MACMAHON,

Cert. R. San Inst.,
Food and Market Inspector

UNSAFE FOODSTUFFS DESTROYED DURING YEAR 1925

(76-D)

MARKET	Wetfish ctts	Saltfish ctts	Beef ctts	Mutton ctts	Pork ctts	Vegetables ctts	Fruits ctts	TINNED GOODS			Eggs No.	Shellfish	Misc.	TOTAL ITEMS
								Cases	Tins	Bottles preserves No.				
Clyde Terrace ...	5,100	936	179	...	163	1,939	1,885	...	33	...	561	604	...	...
Ellenborough ...	1,812	2,206	...	...	144	1,352	124	...	11	...	430	...	5	...
Telok Ayer ...	88	148	1	...	283	4,006	4,272	...	13	25	636	...	...	...
Kandang Kerban	304	88	4	12	302	3,194	813	...	...	...	273	...	1	...
Orchard Road ...	84	...	22	...	28	900	2,136	...	...	...	...	...	...	...
	7,388	3,378	206	12	920	11,371	9,230	...	57	25	1,900	604	6	35,197
Town ...	423	195	9	...	753	2,979	2,178	3,437	12,594	856	2,708	...	39	26,171
Total ...	7,811	3,573	315	12	1,673	14,350	11,408	3,437	12,651	881	4,608	604	45	61,368

M. N. MACMAHON,

Cont. R. San. Inst.
Food and Market Inspector.

A

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MARKETS

RETURN OF PROSECUTIONS FOR THE YEAR 1925

MARKETS		Prosecutions	Convictions	Postponed	Withdrawn	Warrants	Total Fines
Clyde Terrace		.	.	.	.	.	\$ cts.
M. O. 192	...	5	5	...	...	...	21 ...
Market Bye-laws	...	27	27	...	...	...	44 50
Ellenborough		.	.	.	.	.
M. O. 192	...	...	...	...	...	...	...
Market Bye-laws	...	32	31	...	1	...	51 50
Telok Ayer		.	.	.	.	.
M. O. 192	...	...	...	...	...	...	...
Market Bye-laws	...	33	31	...	2	...	56 50
Kandang Kerbau		.	.	.	.	.
M. O. 192	...	1	1	...	...	...	5 ...
Market Bye-laws	...	4	4	...	...	...	8 ...
Orchard Road		.	.	.	.	.
M. O. 192	...	...	...	...	...	...	...
Market Bye-laws	...	4	4	...	...	...	19 ...
Rochore		.	.	.	.	.
M. O. 192	...	2	1	...	1	...	3 ...
Market Bye-laws	...	...	...	...	...	...	...
Peoples Park Hawker Shelter		.	.	.	.	.
M. O. 192	...	...	...	...	...	...	...
Market Bye-laws	...	...	...	...	...	...	...
Town		.	.	.	.	.
M. O. 192	...	2	1	...	1	...	25 ...
M. O. 197	...	1	1	...	...	...	50 ...
GRAND TOTAL	...	III	106	...	5	...	\$283 50

M. N. MACMAHON,

Cert. R. San. Inst.,

Food and Market Inspector.

HEALTH DEPARTMENT

RETURN OF PROSECUTIONS FOR THE YEAR 1925

OFFENCES	Division A. (South) Districts 1 to 13			Division B. (North Districts 14 to 25)		
	Prosecutions	Withdrawn	Convictions	Fines \$	Prosecutions	Withdrawn
Municipal Ordinance 135						
Filthy premises ...	... 30	... 30	... 30	103½	18	7
Allowing premises to be overcrowded ...	" 230	" 230	" 230	...	...	...
Non-compliance with Nuisance Notice ...	" 239	30	4	26	10	8
Do. do. Order ...	" 240	13	6	7	125	...
Do. do. Well Notice ...	" 247	3	...	3	80	...
Opening Well without permission ...	" 247	3	1	2	40	1
Limewash notice not complied with ...	" 227	7	2	5	5	14
Latrine, etc. notice not complied with ...	" 212	2	...	2	...	...
Using nightsoil/or urine as manure ...	" 206	16	1	15	40	23
Nightsoil kept for more than 48 hours ...	" 216	1	...	1	...	...
Offensive matter flowing into Public Drain ...	" 127	1	...	1	10	...
Unlicensed Offensive Trades ...	" 204	20	2	18	109	43
License not exhibited ...	" 371	...	...	...	...	...
Obstructions ...	" 116	110	94	16	87	...
	<i>Carried forward</i> ...	236	110	126	609½	149
					122	27
						504

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HEALTH DEPARTMENT—*continued.*

RETURN OF PROSECUTIONS FOR THE YEAR 1925

OFFENCES	Division A. (South) Districts 1 to 13				Division B. (North) Districts 14 to 25				
	Total	Prosecutions	Withdrawn	Convictions	Fines \$	Prosecutions	Withdrawn	Convictions	Fines \$
Brought forward ...	236	110	126	609½	149	27	122	504	
Byelaws-Sections 57 and 204 M. O. 135									
Unlicensed Foodshops ...	32	8	24	144½	116	33	83	37½	
Do. Milk Vendors ...	2	...	2	15	47	4	43	42½	
Recovery of Daily fines ...	...	...	...	...	...	...	...	...	( 79-D)
Employing women without permission of H. O. ...	...	...	...	...	...	1	...	1	5
Breaches of the Piggery Byelaws ...	1	...	1	5	2	...	2	20	
Unlicensed Piggeries ...	17	1	16	16	13	...	13	13	
Filthy Stables, Cowsheds, etc. ...	...	...	...	...	...	...	...	...
Breaches of the Foodshop Byelaws ...	26	1	25	70½	21	...	21	117	
Markets and Slaughter Houses									
Unsound Food ...	...	Section 192	...	...	8	1	7	51	
Slaughtering Animals excepts in Abattoirs ...	197	,"	...	...	1	...	1	50	
Selling vegetables within 50 yards of market ...	186	,"	...	...	...	...	...	...
Market Byelaws ...	65	...	61	108	37	1	36	74½	
Carried forward ...	379	124	255	968½	395	66	329	1632½	

HEALTH DEPARTMENT—*continued.*

RETURN OF PROSECUTIONS FOR THE YEAR 1925

OFFENCES	Division A. (South) Districts 1 to 13				Division B. (North) Districts 14 to 25			
	Total	Prosecutions	Withdrawn	Convictions	Fines \$	Prosecutions	Withdrawn	Convictions	Fines $
<i>Brought forward ...</i>	379	124	255	968½	395	66	329	1,632½
Hawkers-Section 187 and 188 and Byelaws made there-under								
Stalls in unspecified Streets Section 187	24	6	18	93	55	46
Unlicensed Hawkers	6	1	5	26	7	5
Hawkers Byelaws	15	...	15	96	1	...
Sale of Food and Drugs Ordinance No. 139								
Selling Adulterated Milk Section II-1	7	...	7	85	5	4
Do. Milk deficient in fat „ II-1	...	...	...	...	...	...
Do. Aerated Water containing, poisonous metals in solution	...	„ II-C	6	1	5	75	4	1
Q. & P. of Disease Ordinance No. 157								
Failing to report for examination	...	Section 9-3	26	19	7	150	2	2
Moving patient without permission	...	„	15	...	...	...	...	...
Exposing patient while suffering	...	„	15	...	...	...	...	...
Conveying patient in public vehicle	...	„	19
<i>Carried forward ...</i>	463	151	312	1,493½	469	82	387	1,957½

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HEALTH DEPARTMENT—*continued.*

RETURN OF PROSECUTIONS FOR THE YEAR 1925

OFFENCES	Division A. (South) Districts 1 to 13				Division B. (North) Districts 14 to 25			
	Total Prosecutions	Withdrawn	Convictions	Fines \$	Total Prosecutions	Withdrawn	Convictions	Fines \$
Brought forward ...	463	151	312	1,493½	469	82	387	1,957½
Failing to have child vaccinated ...	Section 31	5	5	...	...	...	...	...
Failing to bring child for inspection ...	," 32	2	1	...	...	...	...	...
Registration Births & Deaths Ordinance No. 59								
Failing to Register Births ...	... Section II	4	4	7	7	1	6	...
Failing to Register Deaths ...	..." 11-1	1	1	...	...	...	...	...
Destruction of Mosquitos Ordinance No. 174								
Failing to comply with notice ...	... Section 8-1	...	...	...	...	...	...	...
Recovery of costs of work done ...	..." 7-1	...	...	...	...	...	...	...
Obstructing public servant in the execution of duty. Section 353 Penal Code ...	...	...	...	...	...	1	...	20
TOTAL ...	...	475	152	323	1,500½	477	83	1,977½
Summary							394	
Total Inspections ...	...	...	...	...	...	...	156,143	
" Prosecutions ...	...	...	...	...	...	...	952	
" Convictions ...	...	...	...	...	...	...	717	
" Fines ...	...	...	...	...	...	...	3,478	
" Withdrawn ...	...	...	...	...	...	...	235	

N.B.—Costs are not included in the amount of fines.

J. B. McMORINE,
For Chief Sanitary Inspector.

RETURN OF NOTICES SERVED AND COMPLIED WITH ETC., DURING THE YEAR 1925.

Nature of Notice	Brought forward from last year	Served during the year	Total	Complied with during the year	Carried forward to next year	REMARKS
Nuisance	...	139	859	998	607	375
Limewash	...	1,410	9,978	11,388	10,907	471
Intimation	...	409	3,660	4,069	3,537	416
Drain	4	4	...	116
Latrine	...	25	13	38	36	1
Well	...	3	6	9	6	3
Abatement order	3	3	3	...
Dest. of Mosquitos	...	93	201	294	142	152
Dest. of Mosquitos	...	2	9	11	10	1
TOTAL	...	2,081	14,733	16,814	15,252	1,419
						143

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J. B. MCMORINE,
For Chief Sanitary Inspector.

MUNICIPAL HEALTH OFFICE.

RETURN OF ARREST CASES DURING THE YEAR 1925.

Date	Name	Address	By whom Arrested	Offence	By whom Tried	Results	Remarks
24/2	Jagnath Singh	... 16-1, Prinsep Street	P. C.	Selling milk without license ...	... 2nd Magst.	Fined \$15.00	
23/2	Pohom Singh	... 72, Dunlop Street	P. C. 41	Do.	"	10.00	
"	Satanarian	... 1034, Serangoon Road...	Do.	Do.	"	10.00	
"	Nagina	... 81, St. Michaels Road...	Do.	Do.	"	10.00	
"	Pargas	... 48, McPherson Road ...	Do.	Do.	"	10.00	
"	Jonko Tivery	... — Temple, Tank Rd. ...	Do.	Do.	...	Discharged.	
"	Raguinee	... 81, St. Michaels Road...	Do.	Do.	...		
"	Mahabee	... 1034, Serangoon Road...	Do.	Do.	...		
"	Rameeba	... 81, St. Michaels Road...	Do.	Do.	...		
"	Paragh	... 4, Birch Road ...	Do.	Do.	...		
"	Ramdathan	... 81, St. Michaels Road...	Do.	Do.	...		
"	Chuttpattee	...	Do.	Do.	...		
18/2	Asagal	...	...	P. C. 366	Do.	5.00	
"	Sahadeo	... 1034, Serangoon Road...	Do.	Do.	...		Bail extreated.
"	Bindra Pundit	...	Do.	Do.	...	5.00	
"	Ali Rajah	...	Do.	Do.	...	5.00	
"	Narapat Singh	... 77, Dunlop Street	Do.	Do.	...	5.00	
					Carried forward ...		135.00

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MUNICIPAL HEALTH OFFICE—*continued.*

RETURN OF ARREST CASES DURING THE YEAR 1925

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Date	Name	Address	By whom Arrested	Offence	By whom Tried	Results	Remarks
18/2	Arnasalam	...	P.C. 366	Selling milk without license ...	... 2nd Magst.	forward ... 135 00	
"	Nuraujan	...	" " "	Do. ...	Do. "	" 5.00 Fined \$5.00	
20/2	Cindatrai	...	" 888	Do. ...	... 3rd Magst.	" 20.00	
"	Rambakas	145 Syed Alwi Road ...	" 394	Do. ...	... 2nd Magst.	" 10.00	
"	Veerapan	164, Coronation Road...	" 964	Do. ...	... 2nd Magst.	" 20.00	
"	Rambrai	80, Dunlop Street ...	" 648	Do. ...	... 2nd Magst.	" 10.00	
17/3	Jaganath	25, St. Michaels Road...	" 555	Do. ...	... 3rd Magst.	" 25.00	
7/3	Kawalpat	...	" "	Do. ...	... 3rd Magst.	" 15.00	
"	Siew	...	" "	Do. ...	... 3rd Magst.	" 15.00	
"	Rannam	...	" "	Do. ...	... 3rd Magst.	" 15.00	
"	Rajoonee	...	" "	Do. ...	... 3rd Magst.	" 25.00	
11/5	Esarie	145, Syed Alwi Road ...	" 667	Do. ...	... 2nd Magst.	" 10.00	
20/8	Jaghancot	80, St. Michaels Road...	" 390	Do. ...	... 2nd Magst.	" 2.50	
"	Bolah	...	" "	Do. ...	... 2nd Magst.	" 2.50	
"	Yodia	66, McPherson Road ...	" "	Do. ...	... 2nd Magst.	" 2.50	
21/8	Ishaibar Singh	1034, Serangoon Road ...	" 989	Having in his possession milk for the purpose of sale or delivery without a license /	Do. ...	" 10.00	
					Carried forward ...		327.50

MUNICIPAL HEALTH OFFICE—*continued.*

RETURN OF ARREST CASES DURING THE YEAR 1925

Date	Name	Address	By whom Arrested	Offence	Brought forward ...	By whom Tried	Results	Remarks
21/8	Bolah	... 81, St. Michaels Road...	P.C. 989	Having in his possession milk for the purpose of sale or delivery without a license	2nd Magst.	Do.	327.50	Cautioned and Discharged.
"	Letchman Singh	... 79, Dunlop Street ...	" 410	Do.	Do.	Do.	...	Fined \$5.00
"	Baboo Ram	... 64, McPherson Road ..	" "	Do.	Do.	Do.	...	Discharged
"	Jagunathan Gualaa..	1034, Serangoon Road...	" "	Do.	Do.	Do.	;" 3.00	
"	Hamridge	..."	" "	Do.	Do.	Do.	;" 3 00	
27/8	Kolam Tai	... —Upper Serangoon Rd.	" 286	Do.	Do.	Do.	;" 5.00	
24/9	Lalbahardoh	... 215, McPherson Road...	" 299	Do.	Do.	Do.	;" 15.00	
15/9	Verasamy	... —Bukit Timah Road ...	" 452	Unlicensed milk seller	Do.	Do.	;" 25.00	
12/11	Sakalucee Singh	... 72, McPherson Road ...	Accom. Insp. Boudewyn to P. Station	Do.	Do.	Do.	;" 5.00	
III/11	Sibagoh	... —Dunlop Street ...	...	Do.	Do.	Do.	;" 3.00	
"	Misha Singh	... 79, Dunlop Street ...	Do.	Do.	Do.	Do.	;" 5.00	
18/12	Juantan Singh	..."	P.C. 84	Do.	Do.	Do.	;" 5.00	or 3 days.
17/12	Chutu Singh	... 148 Syed Alwi Road ...	" 274	Do.	Do.	Magst. Bull	;" 10.00	
					TOTAL ...			\$411.50

(85-D)

J. B. McMORINE,
For Chief Sanitary Inspector.

(86-D)

RETURN OF LICENSES (OFFENSIVE TRADES) ISSUED
DURING THE YEAR 1925.

Nature of License		Number issued	Amount	Remarks
			\$ cts.	
Blachan Store	...	10	240 00	
Brick Kiln	...	2	100 00	
Dye House	...	7	84 00	
Drying and Sorting Fish	...	5	60 00	
Fish Curing	...	...	...
Fruit Preserving	...	8	400 00	
Knacker's Yard	...	1	12 00	
Lime Making	...	...	...
Lye Making	...	...	...
Offal Boiling	...	1	12 00	
Pottery Works	...	...	...
Private Market	...	1	1 00	
Rags and Bones Store	...	2	12 00	
Sago Factory	...	6	300 00	
Sheep or Goat Pens	...	2	24 00	
Sugar Boiling	...	16	775 00	I at 6 months \$25.
Soap Boiling	...	12	135 00	I at 3 months \$3.
Tannery	...	13	650 00	
Cowsheds	...	9	225 00	I at 6 months \$5.
Cattle Sheds	...	239	1,517 00	
Pony Stables	...	31	166 00	
Piggery	...	1,826	3,652 00	
TOTAL	...	2,191	\$8,365 00	

J. B. McMORINE,
For Chief Sanitary Inspector.

(87-D)

RETURN OF QUARANTINE PASSES FOR THE YEAR 1925.

No. of Passes issued	...	...	...	444
No. of Persons reported	...	...	...	902
No. of Persons not reported	...	...	...	64
			—	966

RETURN OF ARTICLES DESTROYED DURING DISINFECTION OF
HOUSES DURING THE YEAR 1925

Nature of Articles destroyed	Number	Remarks
Baskets	2	Compensated
Wooden Tub	1	Compensated

Approximate value of articles	...	...	80 cents
Compensation claimed and paid	...	...	80 ,,
Compensation unclaimed	...	...	Nil

LEPERS COMMITTED TO THE LEPER ASYLUM DURING
THE YEAR 1925

9/2/25	Yeo Chwee Koh	...	91-A Teong Bahru
21/2/25	Wee Yong Swee	...	221 Selegie Road
3/3/25	Tan Ah Yah	...	16 Mansoor Street
21/3/25	Lim Ah Poh	...	251 Victoria Street
21/3/25	Ng Yong Nghee	...	41 Becoolen Street
21/3/25	Lim Chin Teck	...	56-5 Bencoolen Street
18/4/25	Lam Ah Pew	...	136 New Market Road
22/4/25	Lee Ah Sang	...	30 Sungei Road
27/4/25	Wee Sang ...	...	58 Telok Ayer Street
27/4/25	Lim Teng ...	...	173 Bukit Timah Road
27/4/25	Low Ah Chow	...	Nil Bukit Timah Road
28/5/25	Tan Miang Chiang	...	73 York Hill
11/6/25	Leong Yok ...	...	106 Tanjong Pagar Road
8/7/25	Low Kiah Chye	...	5 Tanjong Pagar Dock Coolie Lines
14/7/25	Oh Sye ...	...	296-I Bukit Timah Road
22/7/25	Han Ah Choon	...	8 Koek Road
24/7/25	Chow See ...	...	127 Kallang Road
5/8/25	Cheong Low ...	...	159 New Market Road
28/10/25	Chiang Ah Kum	...	237 Tanjong Pagar Road
3/12/25	Tay Ah Beng ...	...	Quarters No. 5 S.H.B.

TOTAL ... 20

J. B. MCMORINE,
For Chief Sanitary Inspector.

(88-D)

RETURN OF BURIALS IN THE MUNICIPAL BURIAL GROUNDS
DURING THE YEAR 1925

Bidadari :—						
Protestant	...	...	...	...	...	121
French Roman Catholic	...	...	...	...	...	192
Portuguese Roman Catholic	...	...	...	...	...	56
Pauper	...	...	...	...	...	547
Serangoon Road :—						
Mohammedan	...	...	...	...	...	434
Pauper	...	...	...	...	...	...
Bukit Brown :—						
Chinese	...	...	...	...	...	1,005
Pauper	...	...	...	...	...	..
Hindoo Cemetery :—						
Burials	...	...	...	...	...	25
Cremations	...	...	...	...	...	6
Pauper	...	...	...	...	...	...
Infectious Disease :—						
Serangoon Road	...	...	...	...	...	71
Yeo Chu Kang Road	...	...	...	...	...	2
				TOTAL	...	2,459

TOTAL BURIALS SINCE OPENING

Bidadari :—						
Protestant	...	...	...	...	...	2,057
French Roman Catholic	...	...	...	...	...	2,403
Potuguese Roman Catholic	...	...	...	...	...	895
Pauper	...	...	...	...	...	7,690
Serangoon Road :—						
Mohammedan	...	...	...	...	...	3,169
Pauper	...	...	...	...	...	...
Bukit Brown :—						
Chinese	...	...	...	...	...	1,822
Pauper	...	...	...	...	...	...
Hindoo Cemetery :—						
Burials	...	...	...	...	...	25
Cremations	...	...	...	...	...	6
Pauper	...	...	...	...	...	...
Infectious Disease :—						
Serangoon Road	...	...	...	...	...	462
Yeo Chu Kang Road	...	...	...	...	...	553
				TOTAL	...	19,082

RETURN OF LICENSES ISSUED UNDER THE FOOD SHOPS BYELAWS
DURING THE YEAR 1925.

Nature of License	No. Issued	FEES		Remarks
		\$	cts.	
Coffee Shops	...	403	9,468	00
Eating Houses	...	215	4,914	00
Meat Shops	...	84	1,972	00
Bakeries	...	23	552	00
Aerated Water Factories	...	11	252	00
Fish Shops	00
Milk Vendors	...	217	1,085	00
Lodging Houses	...	27	27	00
	TOTAL	890	18,270	00

RETURN OF LICENSES ISSUED UNDER THE HAWKERS BYELAWS
DURING THE YEAR 1925.

Nature of License	No. Issued	FEES		Remarks
		\$	cts.	
Day Hawkers	...	2,117	5,779	90
Night Hawkers	...	3,094	16,440	20
Itinerant Hawkers	...	1,316	1,316	00
	TOTAL	6,527	23,536	10

J. B. McMORINE,
For Chief Sanitary Inspector.

RETURN OF HOUSES DISINFECTED, CONTACTS SENT TO ST. JOHNS, AND ETC. DURING YEAR 1925.

(89-D)

House Disinfected.	Patient removed to Hospital.	Bodies buried under Supervision.	Bodies removed for P.M.	HOUSES QUARANTINED.			REMARKS.
				Contact sent to St. Johns.	Forward From 31-12-24	During year.	
296	301	77	25	7	...	57	...
Phthisis	...	598					
TOTAL	...	894					

J. B. MCMORINE,
For Chief Sanitary Inspector.

CHANGES IN STAFF DURING THE YEAR 1925.

Appointments :—

N. de Souza	...	Sanitary Inspector.
W. J. Collick	...	Do.
Mrs. Tobin	...	Nurse.
Miss Anna Lim	...	Health Visitor.
Mrs. Lam Yoke Moi	...	Do.
Miss McMurray	...	Matron, Middleton Hospital.
A. Thurai	...	House Surgeon.
S. P. Muthu	...	Dresser.
F. Rodrigues	...	Do.
Canapathy Pillai	...	Superintendent, Hindoo Cemetery.
Nadarajan	...	Clerk.
Ng Mong Guan	...	Clerk.
Chua Poh Seh	...	Clerk.
Tan Seow Keok	...	Clerk and Auctioner (Acting).
Ho Hood Thiam	...	Clerk (Acting).
Nair	...	Laboratory Boy.
Annamalai	...	Messenger.
Dawood Khan	...	Disinfecting Peon.

Resignations :—

E. Jacob	...	Dresser.
Tan Seow Keok	...	Clerk and Auctioner
Loh Keng Soo	...	Do.
Wee Kim San	...	Clerk.
Chee Hock Cheong	...	Interpreter.
Mrs. Toft	...	Matron, Middleton Hospital.
Crombayan	...	Laboratory Boy.
Arnasalam	...	Messenger.

Services no longer required :—

Loh Yam Seah	...	Clerk.
F. Rodrigues	...	Dresser.
Chew Puteh	...	Clerk.
Nadarajan	...	Clerk.

Transfers :—

A. Gomes	...	Dresser H. O. to Middleton Hospital.
C. B. Carnegy	...	Sanitary Inspector to Gunong Pulai.
Narainasamy	...	Disinfecting Peon to Mandore Hindoo Cemetery.

Death :—

Gan Hock Tye	...	Overseer, Peoples Park Hawkers Shelter.
--------------	-----	-----------------------------------------

Leave :—

Teo Kwang Mui	...	Clerk and Auctioner—4 months.
Mrs. Toft	...	Matron—8 months.
D. Wilson	...	Divisional Sanitary Inspector—10 months.
W. H. Holley	...	Superintendent, Abattoirs 8½ months.

J. B. MCMORINE,
For Chief Sanitary Inspector.

(91-D)

LARVAE RETURNS FOR YEAR 1925.

District	Houses Inspected	Houses where larvae found	Percentage	Remarks
1	3,760	712	16.27	
2	5,746	574	9.98	
3	5,672	703	12.39	
4	7,037	1,033	14.67	
5	6,371	582	9.13	
6	5,344	722	13.52	
7	5,755	1,071	18.6	
8	4,217	432	10.24	
9	6,167	707	11.46	
10	5,681	2,142	37.7	
11	9,385	1,459	15.54	
12	5,386	863	16.0	
13	2,477	382	15.42	
14	7,535	1,586	21.04	
15	7,710	1,223	15.86	
16	7,750	519	6.69	
17	9,156	1,559	17.0	
18	4,510	234	5.18	
19	7,691	2,542	33.05	
20	8,011	2,794	34.87	
21	10,479	2,321	22.21	
22	5,999	2,563	42.72	
23	3,620	1,048	28.9	
24	3,124	834	26.69	
25	7,560	3,361	44.45	
TOTAL	156,143	31,966	20.47	

J. B. MCMORINE,

For Chief Sanitary Inspector.

(92-D)

RETURN OF ARTICLES DISINFECTED AT THE STEAM DISINFECTOR
DURING THE YEAR 1925.

Name	Number	Approximate Value	Remarks
		\$ cts.	
Awnings (Cloth)	3	4 00	
Blankets	396	792 00	
Bajus ...	460	575 00	
Bags (gunny)	98	19 75	
Bed Frills	4	4 00	
Bed sheets	102	255 00	
Bolsters	74	148 00	
Box covers	2	2 00	
Cushions	2	2 00	
Curtains (window)	80	120 00	
Curtains (door)	26	26 00	
Coats ...	278	834 00	
Collars	2	60	
Cloth (sun)	3	1 15	
Ceiling cloth	1	40	
Curtains (bed)	48	240 00	
Clothes (pieces)	67	67 00	
Clothing (bundle)	128	128 00	
Cover (chair)	1	50	
Cloths (rickshaw)	4	4 00	
Caps ...	2	1 00	
Canvas	3	2 20	
Cotton (bundle)	1	50	
Cloth (white)	52	52 00	
Carpets	4	7 00	
Cloth (oil)	3	6 00	
Cover (toilet)	1	1 00	
Counterpanes	11	27 50	
<i>Carried forward</i>	1,856	3,320 60	

Name	Number	Approximate Value	Remarks
Brought forward ...	1,856	3,320 60	
Clothing (pieces) ...	339	339 00	
Drawers	6	9 00	
Hats	14	7 00	
Handkerchieves	10	2 25	
Jackets	3	6 00	
Kabayah	1	2 50	
Mattress	158	790 00	
Mats	380	380 00	
Mats (bamboo)	33	99 00	
Mattings (rolls)	19	38 00	
Napkins	30	15 00	
Pillows	958	718 25	
Pillow cases	65	65 00	
Pants	125	125 00	
Quilts	2	7 50	
Rags (bundles)	7	1 00	
Shirts	11	16 50	
Socks (pairs)	22	33 00	
Singlets	138	69 00	
Sweaters	2	10 00	
Sarongs	38	38 00	
Trousers	434	868 00	
Towels	159	74 50	
Table (covers)	8	16 00	
Waist coats	2	5 00	
Vest	1	1 25	
TOTAL ...	4,821	\$7,056 35	

The Disinfector was used on 51 occasions and charged 54 times during the year 1925 and on each occasion it worked well.

J. B. MCMORINE,
For Chief Sanitary Inspector.

RETURN OF CASES TREATED BY REGISTERED MIDWIVES
DURING THE YEAR 1925.

Europeans	...	...	...	4
Eurasians	...	...	...	116
Chinese	...	...	...	6,543
Malays	...	...	...	1,145
Indians	...	...	...	271
Others	...	...	...	35
		TOTAL CASES	...	8,114

	FEES		No. of Cases.	
EUROPEANS	Paid by patient	...	4	\$180.00
	„ M. C.	...	...	...
	Part paid by M. C.	...	...	...
EURASIANS	Paid by patient	...	111	1,915.00
	„ M. C.	...	4	20.00
	Part paid by M. C.	...	1	1.00
CHINESE	Paid by patient	...	4,772	43,696.90
	„ M. C.	...	699	3,495.00
	Part paid by M. C.	...	1,072	2,947.10
MALAYS	Paid by patient	...	944	5,855.00
	„ M. C.	...	63	315.00
	Part paid by M. C.	...	138	288.00
INDIANS	Paid by patient	...	230	2,600.00
	„ M. C.	...	31	155.00
	Part paid by M. C.	...	10	28.00
OTHERS	Paid by patient	...	32	576.00
	„ M. C.	...	1	5.00
	Part paid by M. C.	...	2	6.00
	Total Cases and Fees	...	8,114	\$62,083.00

Total cases and fees paid by patient	...	6,093 cases	\$54,822.90
„ „ „ M. C.	...	798 „	\$3,990.00
„ „ „ part paid by M. C.	...	1,223 „	\$3,270.10
	Total	...	\$62,083.00

FEES, ETC.				
Paid by patient to date	...	...	6,093 cases	\$54,822.90
„ M. C. to date	...	...	798 „	3,990.00
Part paid by M. C. to date	...	...	1,223 „	3,270.10
Total Cases and amount paid to date	...	8,114 cases	\$62,083.00	

(95-D)

TOTAL PAID TO DATE BY MUNICIPAL COMMISSIONERS BY
NATIONALITY.

Europeans	...	...	...	...	...
Eurasians	...	...	...	...	\$21.00
Chinese	...	...	...	...	\$6,442.10
Malays	...	...	...	...	\$603.00
Indian	...	...	...	...	\$183.00
Others	...	...	...	...	\$11.00
Cases attended by Medical Practitioners				157	
Cases Twins	..	...	...	47	

A. M. Ganno	...	...	A.	II	Cases.
G. Veitch	...	...	A.	I	„
H. Hayman	...	...	A.	6	„
M. Marumoto	...	...	A.	7	„
M. Bristow	...	...	A.	5	„
M. Massabini	...	...	A.	I	„
Tokuko Hashimoto	...	...	A.	26	„
Teng Cheng Bee	...	...	A.	4	„
Total	...	...	A.	<u>61</u>	Cases.

J. B. McMORINE,
For Chief Sanitary Inspector.

SINGAPORE, 8th February, 1926.

THE DEPUTY HEALTH OFFICER,
 MUNICIPAL COMMISSIONERS,
 SINGAPORE.

SIR,

I beg to submit my Report, on Rat Campaign, for the year 1925.

Traps set in the following :—

			16 Houses, Result, Rats caught			
Albert Street	...	...	16	Houses, Result, Rats caught	...	2
Alkaff Quay	...	...	7	"	"	1
Amber Road	...	...	1	"	"	6
Amoy Street	...	...	183	"	"	94
Angullia Road	...	...	30	"	"	21
Arab Street	...	...	6	"	"	4
Bali Lane	...	...	65	"	"	21
Banda Street	...	...	55	"	"	15
Ban San Street	...	...	13	"	"	7
Battery Road	...	...	1	"	"	1
Blanco Court	...	...	20	"	"	1
Boat Quay	...	...	317	"	"	217
Bolo Street	...	...	5	"	"	—
Bugis Street	...	...	10	"	"	—
Bukit Timah Road	...	...	2	"	"	11
Calcutta Road	...	...	12	"	"	—
Campbell Lane	...	...	51	"	"	17
Canal Road	...	...	28	"	"	4
Cecil Street	...	...	63	"	"	66
Chancery Lane	...	...	1	"	"	3
Cheang Hong Lim Street	...	...	16	"	"	2
Cheang Teo Place	...	...	35	"	"	5
China Street	...	...	12	"	"	2
Chin Swee Road	...	...	45	"	"	9
Chitty Road	...	...	12	"	"	2
Chulia Street	...	...	36	"	"	10
Church Street	...	...	118	"	"	28
Clive Street	...	...	21	"	"	7
Club Street	...	...	23	"	"	2
Clyde Street	...	...	60	"	"	14
Craig Road	...	...	14	"	"	7
Cross Street	...	...	74	"	"	45
Cumming Street	...	...	29	"	"	6
Cuscaden Road	...	...	1	"	"	3
Dalhousie Lane	...	...	53	"	"	19
Dalvey Road	...	...	1	"	"	1
De Souza Street	...	...	1	"	"	3
Dunlop Street	...	...	133	"	"	42
Duxton Road	...	...	69	"	"	39
Earle Quay	...	...	3	"	"	1
Eber Road	...	...	1	"	"	7

Ellenborough Street	...	18 Houses, Result, Rats caught	...	2
Eu Tong Sen Street	...	34	"	2
Finlayson Green	...	1	"	—
Geylang Road	...	1	"	1
George Street	...	10	"	5
Grange Road	...	2	"	12
Guthrie Lane	...	11	"	14
Haji Lane	..	85	"	30
Hare Street	...	25	"	16
Havelock Road	...	193	"	123
High Street	...	1	"	4
Hokien Street	...	22	"	4
Jalan Besar	...	105	"	44
Jalan Sultan	...	58	"	23
Japan Street	...	39	"	9
Jeddah Street	...	27	"	8
Johore Road	...	84	"	58
Kandang Kerbau	}	"	"	1
Female Leper Hosp.				
Kelantan Road	...	20	"	9
Keng Cheow Street	...	38	"	12
Kerr Street	...	8	"	—
Killiney Road	...	1	"	1
Kim Yam Road	...	11	"	3
Larut Road	...	12	"	3
Lim Eng Bee Lane	...	13	"	2
Lorong Kranji	...	3	"	—
Magazine Road	...	2	"	9
Malabar Street	...	9	"	1
Malacca Street	...	24	"	25
Malaya Tribune Office	...	.	"	5
Manasseh Lane	...	16	"	29
Manila Street	...	46	"	29
Market Street	...	202	"	165
Mayo Street	...	19	"	32
Merchant Road	...	7	"	2
Middle Road	...	2	"	1
Middleton Hospital Nurses Quarters	...	.	"	1
Mohamed Ali Lane	...	8	"	2
Mosque Street	...	4	"	4
Moulmein Road	...	1	"	1
Muar Road	...	39	"	32
Municipal Quarters for Motor Car Drivers	...	.	"	7
Municipal Store Pulau Saigon	...	.	"	2
Nagapa Lane	...	15	"	5
Neil Road	...	13	"	7
New Market Road	...	174	"	99
North Bridge Road	...	20	"	1
Omar Road	...	48	"	33
Orange Grove Road	...	2	"	17
Orchard Road	...	1	"	4

Park Road	...	...	32 Houses, Result, Rats caught	...	80
Park Road Coolie Lines	...	...	"	"	12
Pasar Lane	...	24	"	"	18
Pearls Hill Road	...	13	"	"	20
Pekin Street	...	83	"	"	54
Perak Road	...	18	"	"	26
Phillip Street	...	40	"	"	21
Pickering Street	...	11	"	"	4
Pitt Street	...	19	"	"	8
Pulau Saigon Abattoir	...		"	"	32
Queen Street	...	244	"	"	176
Raffles Chamber	...		"	"	14
Raffles Quay	...	17	"	"	5
Ramah Street	...	28	"	"	2
Rangoon Road	...	2	"	"	6
River Valley Road	...	9	"	"	1
Robinson Road	...	45	"	"	15
Rochore Road	...	10	"	"	4
Rochore Canal Road	...	12	"	"	12
Sago Lane	...	84	"	"	12
Sago Street	...	5	"	"	—
Selegie Road	...	25	"	"	6
Serangoon Road	...	1	"	"	1
Shaik Madersah Lane	...	71	"	"	58
Solomon Street	...	9	"	"	—
South Bridge Road	...	2	"	"	14
South Canal Road	...	19	"	"	2
Spring Street	...	20	"	"	12
Stanley Street	...	56	"	"	15
Sungei Road	...	23	"	"	33
S. V. C. Drill Hall	...		"	"	5
Synagogue Street	...	25	"	"	21
Tanjong Pagar Road	...	245	"	"	142
Tan Tock Seng Hospital					
Doctors' quarters	...	2	"	"	4
Telegraph Street	...	4	"	"	—
Telok Ayer Street	...	249	"	"	190
Teo Chew Street	...	15	"	"	4
Thomson Road	...	1	"	"	2
Tiwary Street	...	7	"	"	2
Upper Chinchew Street	...	97	"	"	11
Upper Cross Street	...	4	"	"	—
Victoria Street	...	• III	"	"	66
Wallich Street	...	II	"	"	11
Weld Road	...	61	"	"	22

Total number of Rats caught for the year, 1925... 2,787

Notices under section 228 for tampering with Rat traps were served during the year on many tenants of houses, and complied with, but these actions will not prevent them from further tampering, unless stronger steps are taken, such as, issuing out summonses for obstructing an officer in the execution of his duties, quarantining the inmates of the premises or otherwise.

I have the honour to be,

Sir,

Your obedient servant,

G. A. AHIN,
Overseer, Rat Campaign.

1925

Annual Report of Burial Ground Inspector T. G. S. Bracken.

Inspections

There were 4,686 inspections made during the year.

Burials

Europeans	...	...	...	63
Eurasians	...	...	...	III
Chinese	...	...	...	4,876
Malays	...	...	...	1,289
Indians	...	...	...	474
Others	...	...	...	61
				<hr/>
				6,874
				<hr/>

Exhumations

There were 29 Bodies Exhumed under supervision during the year.

Cremations

There were 192 bodies cremated during the year. The following return shows the number of burial Grounds in use Public and Private belonging to various Nationalities within Municipal Limits.

		Public	Private	Total	Remarks
Christian	...	2	...	2	
Jewish	...	I	...	I	
Parsee	...	I	...	I	
Parsee Islam	...	I	...	I	
Malay	...	5	5	10	
Hokien	...	8	80	88	
Teochew	...	I	9	10	
Hindoo	...	I	...	I	
Kling Islam	...	I	2	3	
Prison and General Hospital	...	I	...	I	
TOTAL	...	22	96	118	

The total number of Burial Grounds within Municipal Limits are 196 of these 136 are private, 94 being in use and 42 disused 60 are public of which 22 are in use and 38 disused.

(100-D)

The following return shows the number of Burial Grounds registered or Licensed, used, disused., Public and Private within Municipal Limits.

	PRIVATE		PUBLIC		Total
	Used	Disused	Used	Disused	
Registered under the Indian act and not Licensed by Municipal Commissioners.	23	16	3	8	50
Registered under the Indian act and Licensed by Municipal Commissioners ...	31	2	2	8	43
Registered by Municipal Commissioners ...	20	23	10	15	68
Licensed by Municipal Commissioners ...	20	1	7	7	35
TOTAL ...	94	42	22	38	196

(101-D)

MUNICIPAL ABATTOIRS

PULAU SAIGON AND JALAN BESAR

Return for the year ending 31st December, 1925.

Months		Pigs	Sheep	Goats	Bullocks	Buffaloes	Total
January	..	15,323	2,147	681	1,559	123	19,833
February	...	12,245	2,082	350	1,486	150	16,313
March	...	13,097	2,583	476	1,782	87	18,025
April	...	12,993	2,669	593	1,751	31	18,037
May	...	12,738	2,390	423	1,698	17	17,266
June	...	13,016	2,249	468	1,663	40	17,436
July	...	13,157	1,876	859	1,838	13	17,743
August	...	13,658	2,258	407	1,797	13	18,133
September	...	13,452	2,364	456	1,763	...	18,035
October	...	13,571	2,839	569	1,877	17	18,873
November	...	13,513	2,347	369	1,938	18	18,185
December	...	14,021	2,598	569	2,047	34	19,269
		160,784	28,402	6,220	21,199	543	217,148
Ending 31st Dec.,	1924	152,441	28,054	6,828	20,030	543	207,896

ANIMALS SLAUGHTERED BY SPECIAL LICENSES

Outside the Abattoirs

—	Pigs	Sheep	Goats	Bullocks	Buffaloes	Total	Fees
1st Half Year	201	Nil	66	28	Nil	295	\$ 590
2nd „ „	265	„	86	27	„	378	756
Free Licenses Issued	...	...	48	12	...	...	...
By Contract	...	By sale of Pig's bristles at both Abattoirs					180
		„ „	Bullock's blood at P. Saigon Abattoirs				

BUTCHERS AT

*Pulau Saigon Abattoir**Jalan Besar Abattoir*

On the 1st January, 1925	...	65	On the 1st January, 1925	...	45
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(102-D)

Total of animals and Fees received during the year ending 31st December, 1925

Name of Animals	Pulau Saigon	Fees	Jalan Besar	Fees	Grand Total Fees
		\$ cts.		\$ cts.	\$ cts.
Pigs ...	90,652	45,326 00	70,132	35,066 00	80,392 00
Sheep ...	315	110 25	28,087	9,830 45	9,940 70
Goats ...	153	53 55	6,067	2,123 45	2,177 00
Bullocks ...	21,199	21,199 00	...	...	21,199 00
Buffaloes ...	543	543 00	...	...	543 00
Pen Rent Fees ...	...	2,702 30	...	1,860 55	4,562 85
Depôts Fees ...	...	5,674 10	...	2,915 60	8,589 70
Pig's Bristles Fees ...	...	180 00	...	...	180 00
Bullock's Blood ,,	...	180 00	...	...	180 00
Special Licenses,,	...	...	...	...	1,346 00
					129,110 25
Ending 31st Dec., 1924	...				123,870 10

Dead and diseased animals destroyed during the year ending 31st December, 1925

Pigs	...	...	...	...	993
Sheep	...	...	...	...	20
Goats	...	...	...	...	11
Cattle	...	...	...	...	2
					1,026
Animals rejected in bad condition...		...	...	...	61
Injured animals brought in by the Ambulance		...	...	...	122
Animals passed in with Special Order		...	...	...	1,396
Damage parts and diseased organs of animals destroyed		...	...	...	4,101
Diseased carcases of animals destroyed, Pigs 71, Sheep 5, Goat 1, Bullocks 4	...	...	...	...	81
Animals shot and destroyed, unfit for food, Bullocks 8		...	...	...	8
Australian Sheep received for slaughter		...	...	...	7,091
Animals received at the Knacker's Yard		...	...	...	...
Horses and Ponies 7, Cattle 121	...	...	...	...	128

H. MONTEIRO,
Deputy-Superintendent.

(103-D)

MUNICIPAL PIGS DEPOTS
PULAU SAIGON AND JALAN BESAR

Return for the year ending 31st December, 1925

PULAU SAIGON

JALAN BESAR

Months	No. of Pigs Left	Fees	Dead	No. of Pigs Left	Fees	Dead
		\$ cts.			\$ cts.	
January	11,506	575 30	27	3,807	190 35	7
February	7,523	376 15	5	2,529	126 45	2
March	9,760	488 00	12	4,936	246 80	1
April	8,841	442 05	21	4,701	235 05	3
May	7,899	394 95	24	4,802	240 10	6
June	11,910	595 50	25	8,390	419 50	4
July	7,792	389 60	13	2,874	143 70	3
August	7,939	396 95	13	4,390	219 50	4
September	12,585	629 25	49	9,310	465 50	8
October	11,072	553 60	41	5,261	263 05	26
November	7,226	361 30	58	3,342	167 10	18
December	9,429	471 45	48	3,970	198 50	29
	113,482	5,674 10	336	58,312	2,915 60	111
Ending 31st Dec., 1924	106,926	5,346 30	187	62,676	3,133 80	59

H. MONTEIRO,

Deputy-Superintendent.

